WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE

and

OREGON STATE UNIVERSITY

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

AS OF
MAY 1, 1964

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 2807, Portland, Oregon 97208.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Western United States	Monthly (Feb.-May)	Portland, Oregon	All Cooperators
Basic Data Summary	October 1	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan.15 - Apr.1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. State University Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Jan.-June)	Boise, Idaho	Idaho State Reclamation Engineer
Montana	Monthly (Jan.-June)	Bozeman, Montana	Mont. Agr. Exp. Station
Nevada	Monthly (Jan.-May)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources - Division of Water Resources
Oregon	Monthly (Jan.-June)	Portland, Oregon	Oreg. State University Oregon State Engineer
Utah	Monthly (Jan.-June)	Salt Lake City, Utah	Utah State Engineer
Washington	Monthly (Feb.-June)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Water Resources Service, Dept. of Lands, Forest and Water Resources, Parliament Bldg., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, P.O. Box 388, Sacramento, Calif.

USDA-SCS PORTLAND OREG 1963

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

ISSUED

MAY 8, 1964

Report prepared by

W. T. FROST, Snow Survey Supervisor

and

BOB L. WHALEY, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
209 S.W. 5TH AVE., PORTLAND 4, OREGON

Issued by

THOMAS P. HELSETH
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE

F. EARL PRICE
DIRECTOR
OREGON AGRICULTURAL
EXPERIMENT STATION

CHRIS L. WHEELER
STATE ENGINEER
STATE OF OREGON

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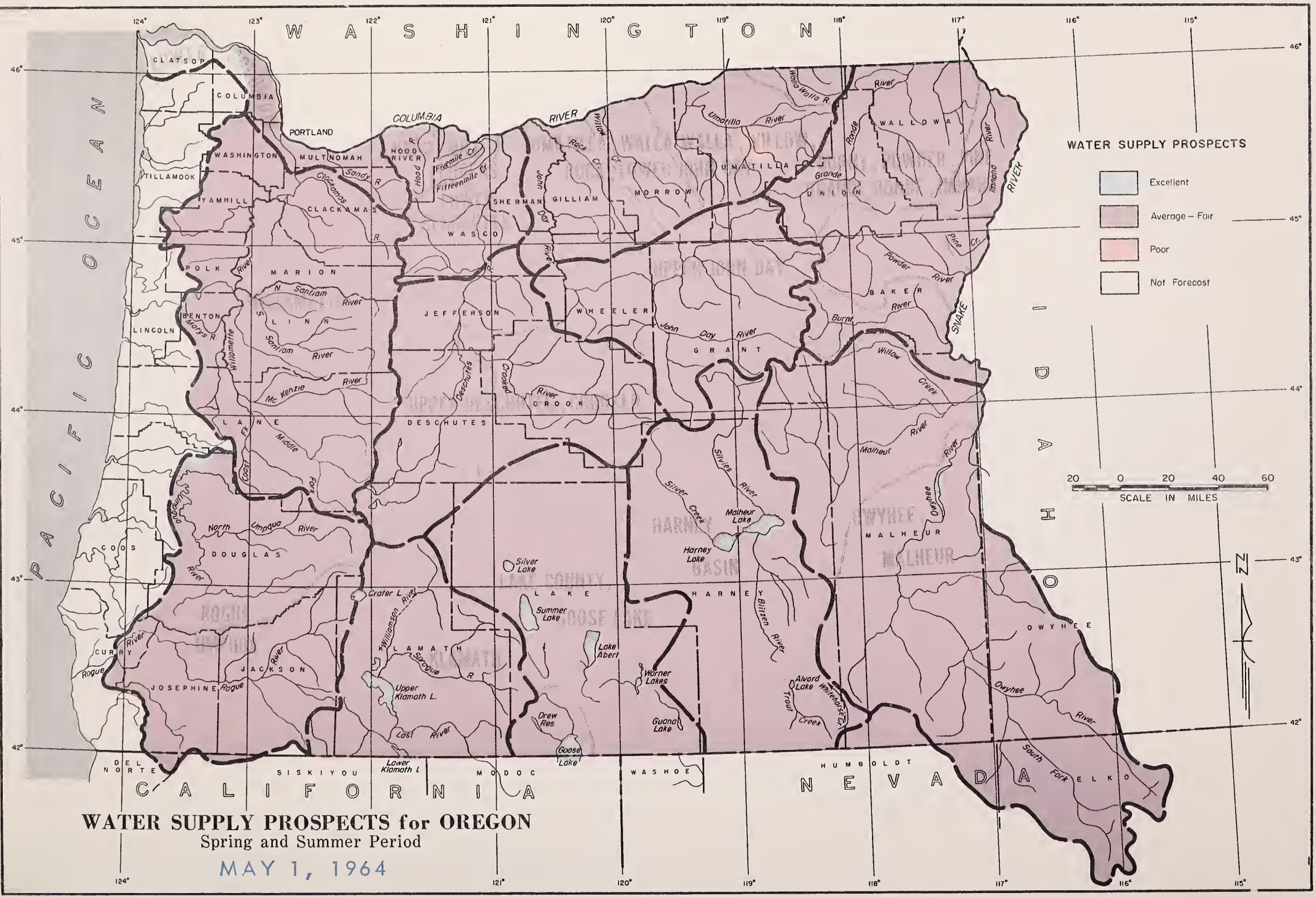


WATER SUPPLY PROSPECTS for OREGON

Spring and Summer Period

MAY 1, 1964

WATER SUPPLY OUTLOOK for OREGON

MAY 1, 1964

The 1964 irrigation season is underway in Oregon with an adequate water supply outlook for all areas except lands served from McKay Reservoir near Pendleton. Cooler than average April temperatures delayed snowmelt at higher elevations and retarded streamflow over much of the state, however reservoir storage in general is good and streamflow for the remainder of the season is expected to be near average.

SNOW COVER

Water content of the snowpack ranges from 100 percent of average on the Rogue-Umpqua basins to 173 percent on the Umatilla-Walla Walla basins. Cooler April temperatures delayed usual melting of the snowpack and allowed a continued accumulation at higher elevations over much of the state.

SOIL MOISTURE

Watershed soils continued to absorb some snowmelt water at higher elevations and are now 84 to 90 percent of total capacity.

RESERVOIR STORAGE

Water stored in 22 major Oregon reservoirs now totals 88 percent of the May 1 average for the 1943-57 period. This will provide an adequate supply for all lands except those served from McKay Reservoir near Pendleton where some late season shortages are likely.

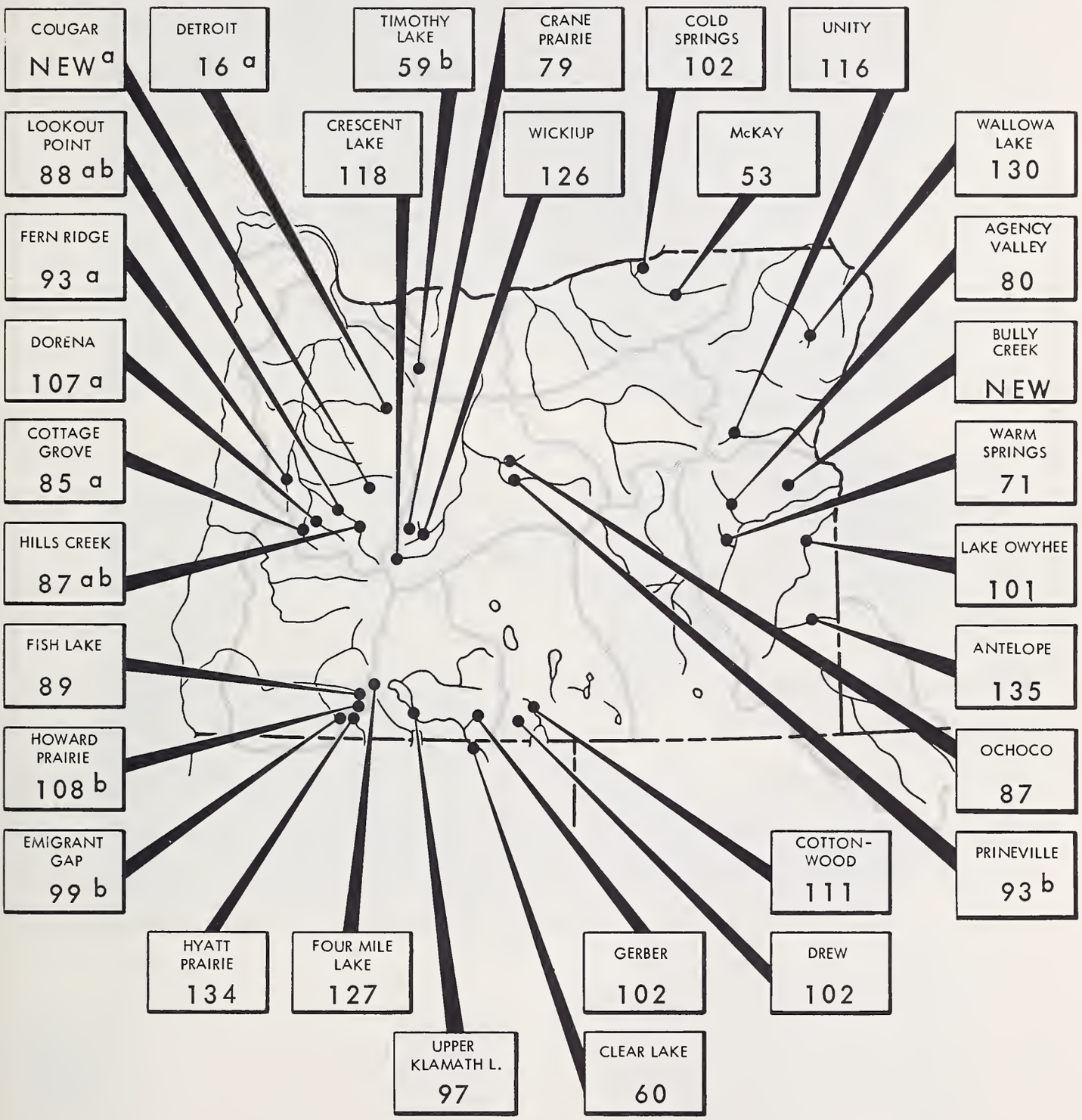
STREAMFLOW

Streamflow forecasts for the remainder of the irrigation season range from 80 percent for the inflow to Ochoco Reservoir near Prineville and 83 percent for the Malheur near Drewsey to 107 percent for Drews Reservoir near Lakeview.

April streamflow was retarded by cool temperatures and less than expected April flow on the Malheur may cause a little less than average water allotment for the Vale, Oregon and Warmsprings Irrigation Districts.

STORAGE STATUS of OREGON RESERVOIRS
as percent of 1943-57, 15 year average

MAY 1, 1964



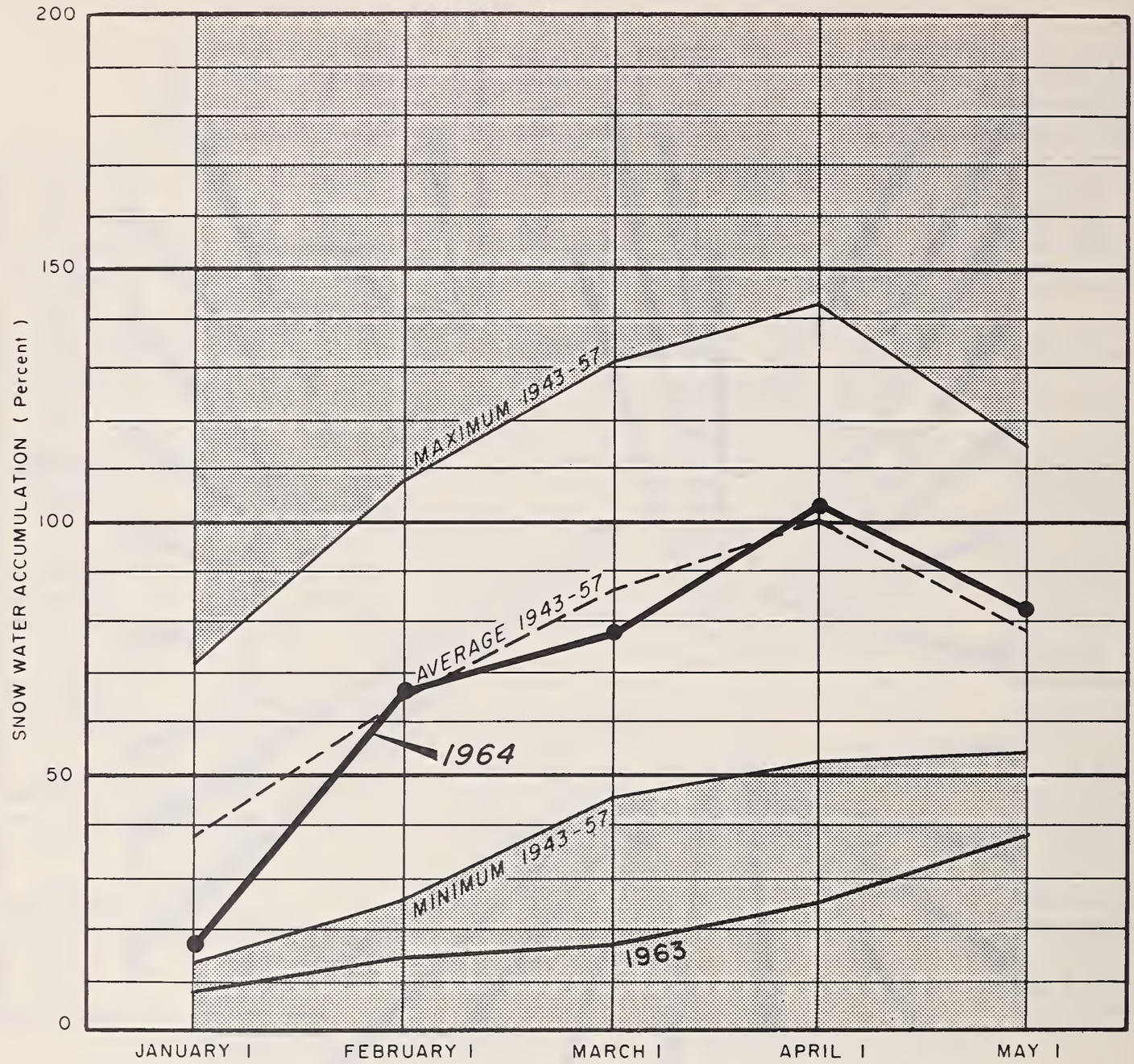
(a) Multiple purpose reservoir - space reserved primarily for flood runoff.

(b) Short record - compared with last year on this date.

N.R. - No report.

SNOW WATER ACCUMULATION in OREGON

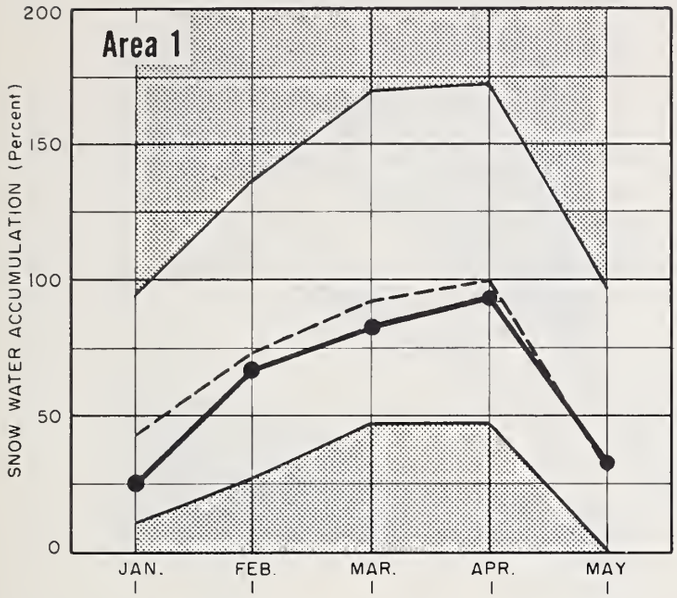
MAY 1, 1964

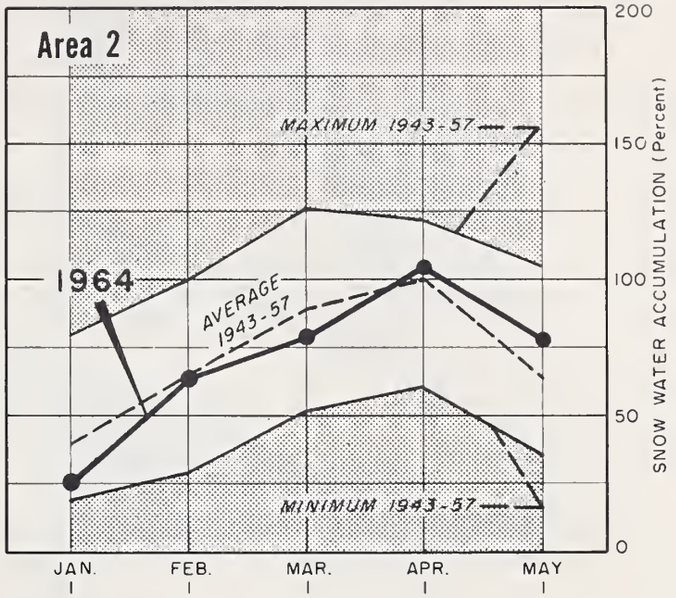


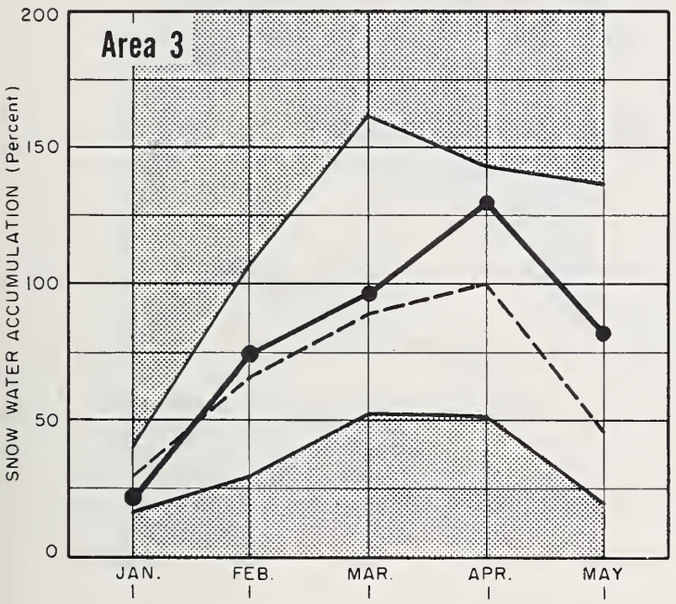
SNOW WATER ACCUMULATION in OREGON

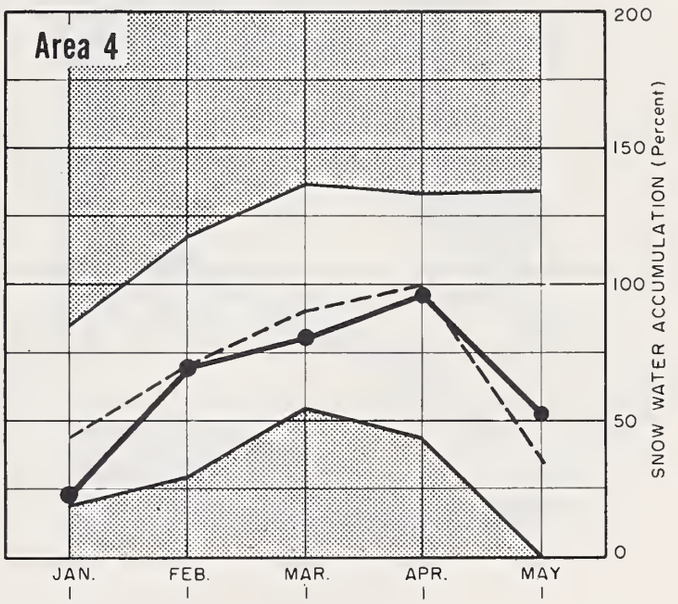
(Percent of average maximum accumulation)

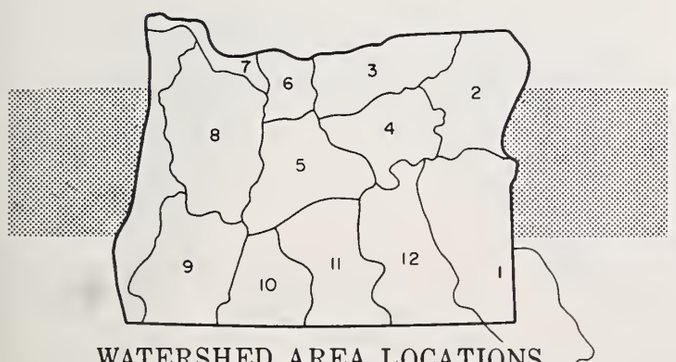
MAY 1, 1964





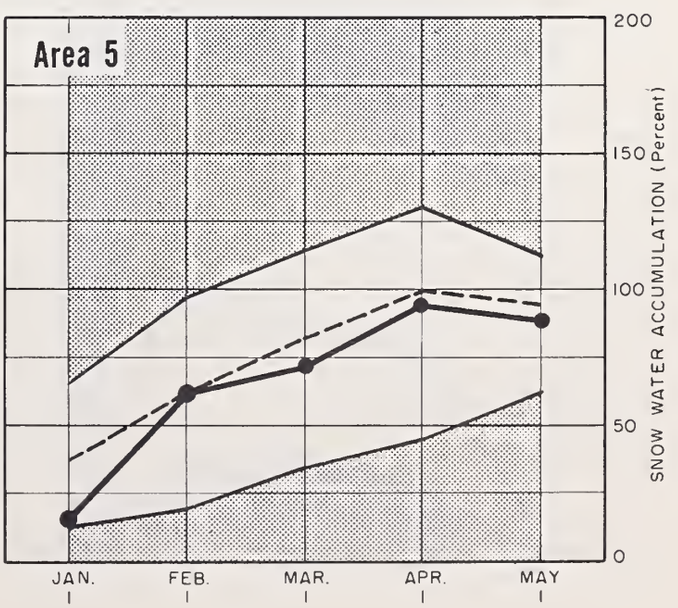






WATERSHED AREA LOCATIONS

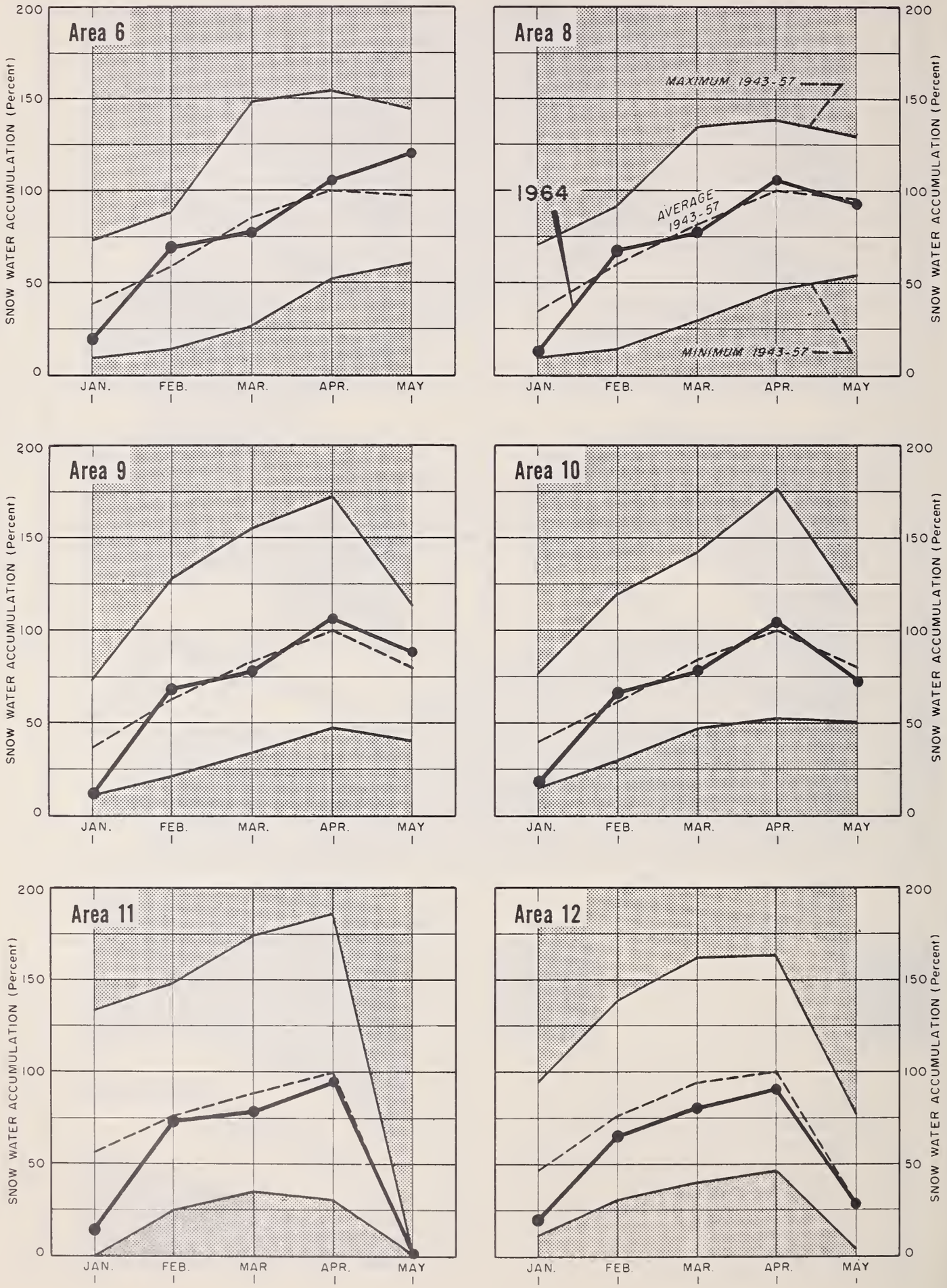
AREA 1 - OWYHEE, MALHEUR WATERSHEDS
AREA 2 - BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
AREA 3 - UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
AREA 4 - UPPER JOHN DAY WATERSHEDS
AREA 5 - UPPER DESCHUTES, CROOKED, WATERSHEDS
AREA 6 - HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
AREA 7 - LOWER COLUMBIA WATERSHEDS
AREA 8 - WILLAMETTE WATERSHEDS
AREA 9 - ROGUE, UMPQUA WATERSHEDS
AREA 10 - KLAMATH WATERSHEDS
AREA 11 - LAKE COUNTY, GOOSE LAKE WATERSHEDS
AREA 12 - HARNEY BASIN WATERSHEDS



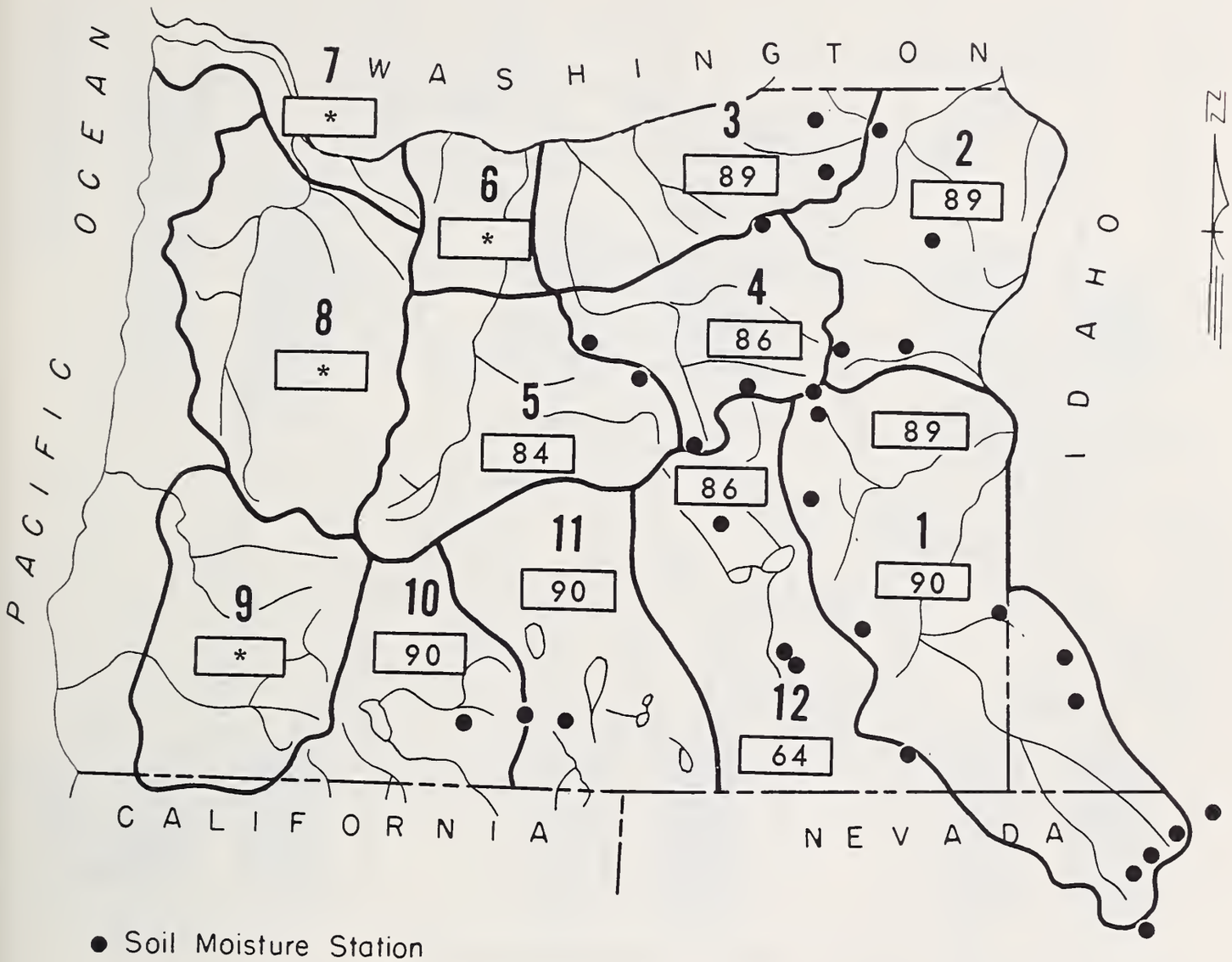
SNOW WATER ACCUMULATION in OREGON

(Percent of average maximum accumulation)

MAY 1, 1964



MOUNTAIN SOIL MOISTURE in OREGON
as percent of capacity
MAY 1, 1964



● Soil Moisture Station

**Moisture studies not yet developed in these areas.*

VALLEY PRECIPITATION in OREGON [a]

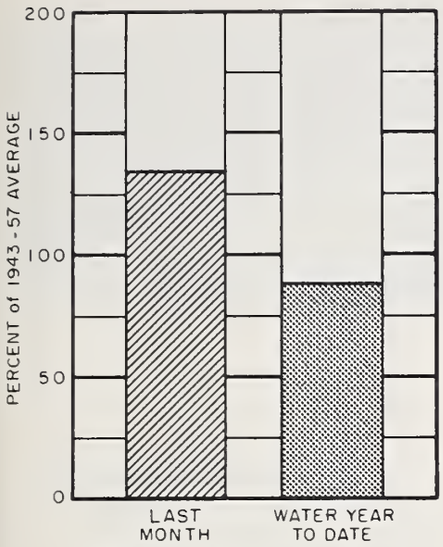
MAY 1, 1964

PRECIPITATION as PERCENT of the 1943-57 AVERAGE					
STATION	LAST MONTH	WATER YEAR TO DATE [b]	STATION	LAST MONTH	WATER YEAR TO DATE [b]
Baker Apt.	51	94	Lakeview	71	97
Bend	20	66	Medford Apt.	41	98
Burns	79	86	Nyssa	180	108
Enterprise	169	79	Pendleton Apt.	29	64
Eugene Apt	58	96	Portland Apt.	77	82
Heppner	74	75	Roseburg Apt.	49	90
John Day	99	81	Salem Apt.	58	83
Klamath Falls Apt.	31	77	The Dalles	25	67

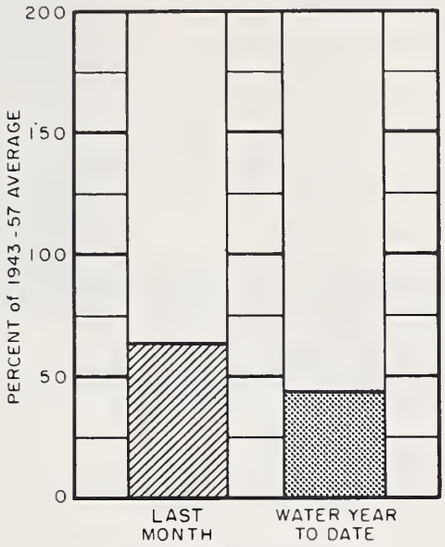
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

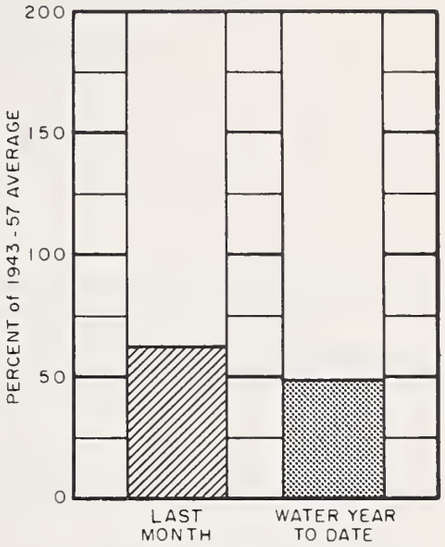
MAY 1, 1964



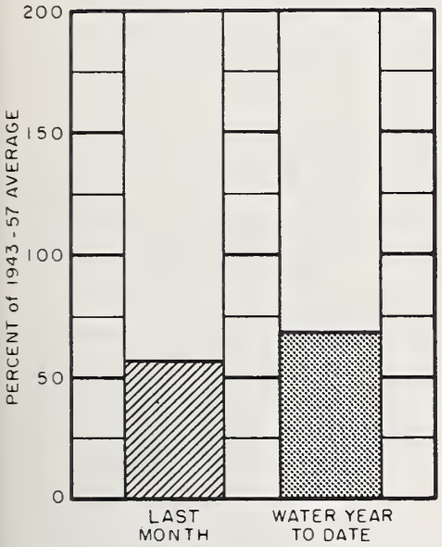
Owyhee Lake net inflow



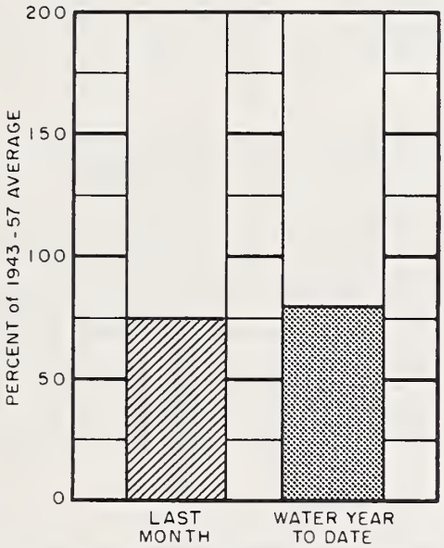
Umatilla near Umatilla



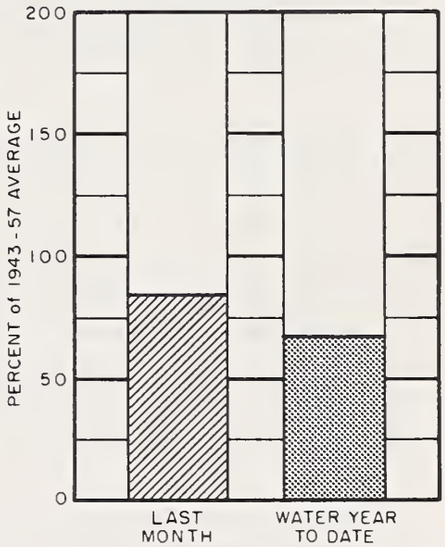
John Day at Service Creek



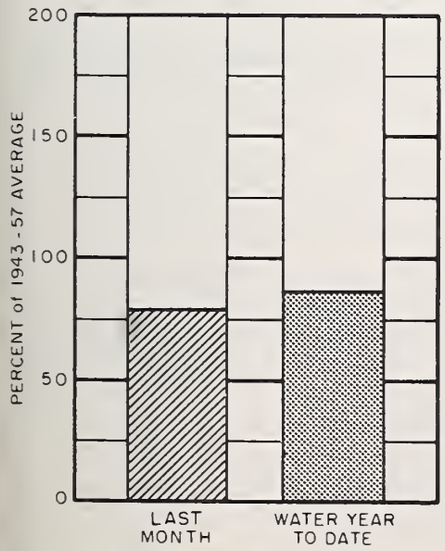
Deschutes at Moody



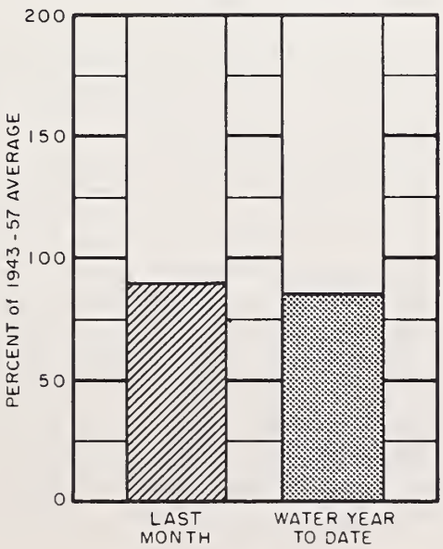
Hood and conduit near Hood River



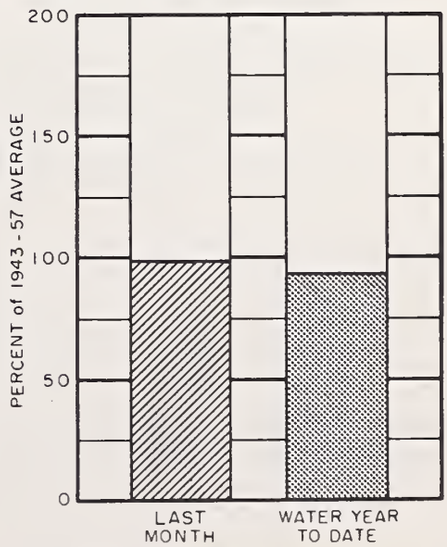
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.;

WATER SUPPLY OUTLOOK
OWYHEE, MALHEUR WATERSHEDS
OREGON

as of

MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1964 irrigation season began in Malheur County with a very good water supply outlook for Owyhee water users - the best since 1958 - the last time Lake Owyhee filled.

The water supply outlook for Malheur water users has been dimmed slightly by below average April increases to reservoir storage. Water supplies are expected to be slightly less than the 3 acre foot allotment usually made on the Vale, Oregon and Warmsprings Irrigation Districts unless streamflow improves greatly in the next two months.

Jordan Valley water users are now expected to have an average water supply after above average April inflow to Antelope Reservoir.

SNOW COVER - Snow cover on the Owyhee watershed is 100 percent of the May 1 average and 113 percent of last year at this time.

The low and middle elevation snow present one month ago on the broad plateaus of the Owyhee has melted during April contributing to above average streamflow.

Snow cover on the Malheur has disappeared except at higher elevations such as Blue Mountain Springs where it is about 150 percent of May 1 average. Cool nights retarded the melt and tributaries of the Malheur did not produce as much water as was expected in April.

SOIL MOISTURE - Watershed soils on the Malheur soaked up as much as 4.5 inches of snowmelt water at the higher elevations helping to retard streamflow to some extent. Malheur watershed soils now average 89 percent of capacity.

Owyhee soils are now 90 percent of capacity and should continue to aid runoff.

RESERVOIR STORAGE - Lake Owyhee now holds 624,700 acre feet or 101 percent of the 1943-57 May 1 average. Last year it held only 378,900 acre feet. This is the most water held in Lake Owyhee since May 1, 1958-the last time it filled.

Agency Valley now holds 43,500 acre feet or 80 percent of average and only 75 percent of last year. Warmsprings holds 99,200 acre feet or 71 percent of average and 87 percent of last year.

Antelope Reservoir picked up much needed inflow during April and now holds 40,100 a.f. or 135 percent of average and 140 percent of last year.

STREAMFLOW - Streamflow during April was about one third better than average on the Owyhee but only about half to two thirds of average on the Malheur.

Streamflow forecasts for the May through September period now range from 83 percent or 30,000 acre feet on the Malheur at Drewsey to 93 percent or 200,000 acre feet for the inflow to Lake Owyhee. The North Fork of the Malheur at Beulah is expected to flow 32,000 acre feet or 84 percent of average.

continued on next page

Report prepared by
W. T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

This will allow an average season for Owyhee water users but irrigators using water from the Malheur system are expected to be curtailed somewhat due to below average storage unless warm weather and rains improve streamflow in the next 1 or 2 months.

Jordan Valley Irrigation District is now expected to have a good irrigation season.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Average	Average
Bully Creek	Average	Average
Cow Creek	Average	Average
Jordan Creek	Average	Average
Jordan Valley Irrig. Dist.	Average	Average
McDermitt Creek	Average	Average
Oregon Canyon Creek	Average	Average
Owyhee Project	Average	Average
Succor Creek	Average	Average
Tenmile Creek	Average	Average
Vale Oregon Irrig. Dist.	Average	Fair
Warmsprings Irrig. Dist.	Average	Fair
Willow Creek (Reservoired)	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	43.5	57.2	54.0
Antelope	55.0	40.1	28.7	29.8
Bully Creek	31.0	22.3	- -	- -
Owyhee	715.0	624.7	378.9	617.5
Warmsprings	191.0	99.2	114.7	140.2

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

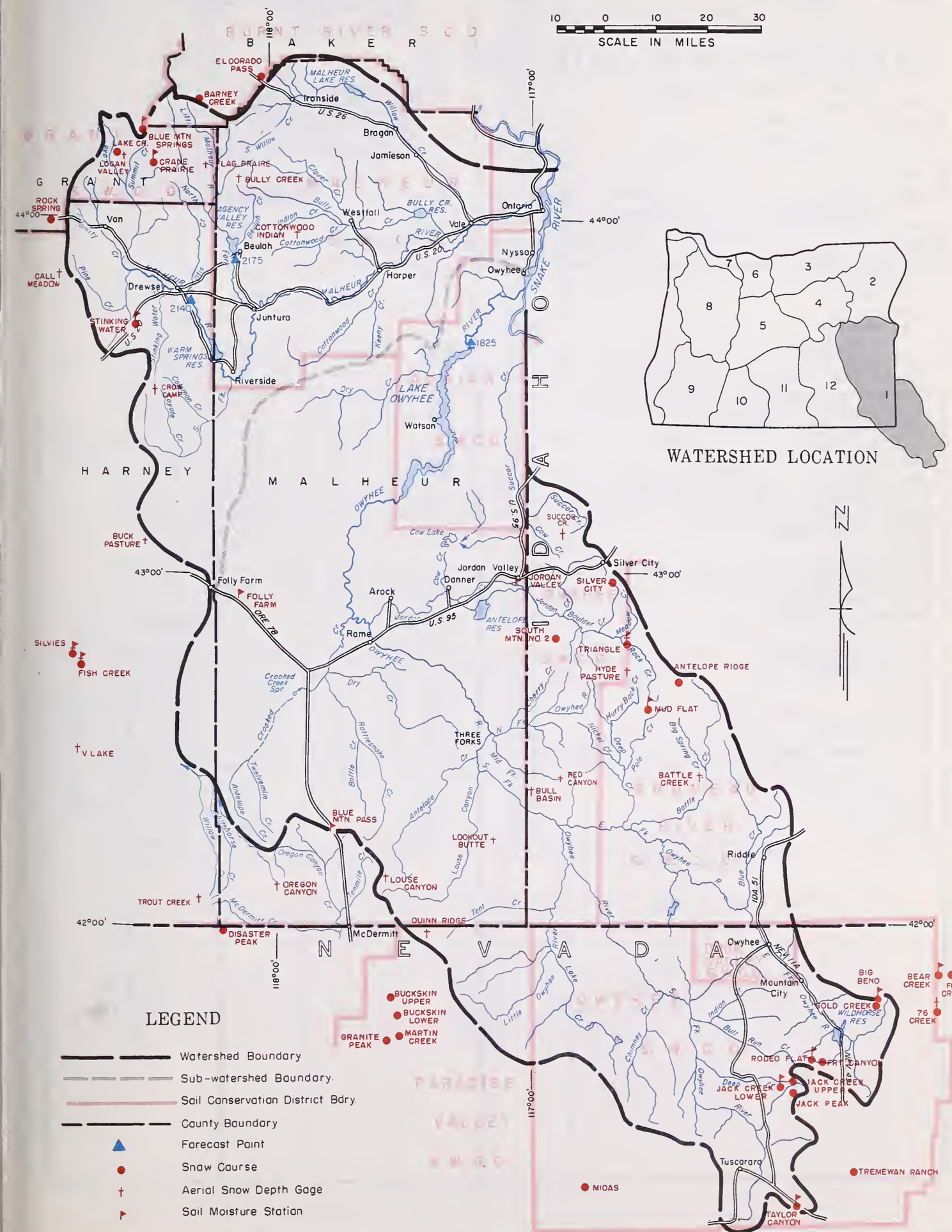
FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
2140	Malheur near Drewsey	30	May-Sept.	36	83
		29	May-July	35	83
2175	Malheur, North Fork at Beulah [d]	32	May-Sept.	38	84
1825	Owyhee Reservoir net Inflow [k]	200	May-Sept.	214	93
		185	May-July	196	94

SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bear Creek (Nev.)	7800	72	16.9	2-27-64	9.9[f]	11.3[f]	11.5[f]
Big Bend (Nev.)	6700	48	16.7	4-29-64	16.5	16.2	16.6
Blue Mountain Springs	5900	42	16.9	4-28-64	12.5	14.0	14.4
Crane Prairie	5375	48	18.2	4-28-64	17.4	17.4	17.7
Folly Farm	4450	30	12.5	3-8-64	8.3[f]	9.8[f]	11.6
Jack Creek, Lower (Nev.)	6800	48	8.7	5-1-64	8.4	8.6	8.5
Jordan Valley	4250	48	19.3	3-8-64	14.5[f]	16.8[f]	14.8[f]
Mud Flat (Ida.)	5500	48	12.8	3-25-64	9.5[f]	11.4[f]	9.5[f]
Rodeo Flat (Nev.)	6800	42	11.0	4-29-64	10.8	10.9	11.0
Stinking Water Summit	4800	48	21.9	3-25-64	20.8[f]	21.9[f]	21.9
Taylor Canyon (Nev.)	6200	48	15.1	5-1-64	14.9	14.3	14.9
Triangle (Ida.)	5150	48	16.2	3-25-64	13.5[f]	15.2[f]	13.9[f]

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (l) Ground measurement. (m) Average for 5 or more years in base period.

OWYHEE, MALHEUR WATERSHEDS



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SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Antelope Ridge (Ida.)	5900	c				
Barney Creek	5950	c				
Battle Creek[e] (Ida.)	5700	4/15	2	1.0	- -	- -
Bear Creek[e] (Nev.)	7800	4/29	44	17.5	18.6	21.2 [h]
Big Bend (Nev.)	6700	4/29	6	2.4	T	1.6 [h]
Blue Mountain Springs	5900	4/28	26	10.4	10.8	6.7 [m]
Buck Pasture	5700	4/15	6	3.0	- -	- -
Buckskin, Lower (Nev.)	6700	c				
Buckskin, Upper (Nev.)	7200	c				
Bull Basin[e] (Ida.)	5600	4/15	0	0.0	- -	- -
Bully Creek[e]	5300	c				
Call Meadows[e]	5340	c				
Cottonwood-Indian[e]	4320	c				
Crane Prairie	5375	4/29	0	0.0	- -	- -
Crow Camp[e]	5500	c				
Disaster Peak (Nev.)	6500	c				
Eldorado Pass	4600	4/30	0	0.0	0.0	- -
Fish Creek[e]	7900	4/15	60	29.0	- -	- -
Flag Prairie[e]	4750	c				
Fox Creek (Nev.)	6800	c				
Fry Canyon (Nev.)	6700	4/29	0	0.0	T	1.3 [h]
Gold Creek (Nev.)	6600	4/29	0	0.0	0.0	0.0 [h]
Granite Peak (Nev.)	7800	c				
Hyde Pasture[e] (Ida.)	5800	4/15	3	1.5	- -	- -
Jack Creek, Lower (Nev.)	6800	5/1	T	T	2.2	0.0 [h]
Jack Creek, Upper (Nev.)	7250	5/1	6	1.2	5.3	4.0 [h]
Jack Peak (Nev.)	8420	5/1	69	25.2	24.0	26.8 [h]
Lake Creek	5120	4/29	0	0.0	- -	- -
Logan Valley	5100	c				
Lookout Butte[e]	5650	4/15	0	0.0	- -	- -
Louse Canyon[e]	6440	4/15	2	1.0	- -	- -
Martin Creek (Nev.)	6700	c				
Midas (Nev.)	7200	c				
Mud Flat (Ida.)	5500	c				
Oregon Canyon[e]	6950	4/15	6	3.0	- -	- -
Quinn Ridge[e] (Nev.)	6300	4/15	0	0.0	- -	- -
Red Canyon[e] (Ida.)	6500	4/15	10	4.5	- -	- -
Rock Spring	5100	4/29	0	0.0	0.0	- -
Rodeo Flat (Nev.)	6800	4/29	0	0.0	T	1.7 [h]
76 Creek (Nev.)	7100	c				
Silver City (Ida.)	6400	5/3	27	11.4	- -	7.3 [h]
Silvies[e]	6900	4/15	27	13.5	- -	- -
South Mountain #2 (Ida.)	6340	4/29	22	9.4	0.4	3.5 [h]
Stinking Water	4800	4/29	0	0.0	- -	- -
Succor Creek[e] (Ida.)	6100	4/15	18	8.1	- -	- -
Taylor Canyon (Nev.)	6200	5/1	0	0.0	1.0	0.0 [h]
Tremewan Ranch (Nev.)	5700	4/29	0	0.0	0.0	- -
Triangle[e] (Ida.)	5150	4/15	0	0.0	- -	- -
Trout Creek[e]	7800	4/15	24	8.4	- -	- -
"V" Lake[e]	6600	4/15	8	4.0	- -	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for Baker, Union and Wallowa counties is good as a result of cool April temperatures delaying runoff. Snow did not melt as rapidly as usual at higher elevations and still remains to add to future streamflow. Reservoir storage is above average and upper watershed soils are well wetted.

SNOW COVER

Snow cover on the Burnt River watershed is 105 percent of the May 1 average and on the Grande Ronde 117 percent. Snow courses on the Powder do not have a long enough record to establish a May 1 average but indicated about 157 percent of last year on May 1.

Snow did not melt as rapidly as usual in April due to cooler than average temperatures and a good cover still remains at higher elevations.

SOIL MOISTURE

Watershed soils are now primed to 89 percent of capacity with some areas soaking up as much as 4.5 inches of snowmelt water during April.

RESERVOIR STORAGE

Unity is now full at 25,200 acre feet and Wallowa Lake holds 24,300 acre feet or 130 percent of average. Last year it held 29,200 acre feet on May 1.

STREAMFLOW

Streamflow forecasts for the May-September period vary from 88 percent or 105,000 acre feet on the Grande Ronde to 93 percent or 10,500 on the Wallowa, East Fork.

Burnt River is expected to flow 17,000 acre feet May through September or 90 percent of average and Powder River 41,000 or 93 percent. Catherine Creek is forecast to flow 51,000 acre feet or 89 percent of average for the same period.

Bear Creek is expected to flow 65,000 acre feet or 88 percent for the April-September period. Hurricane is forecast to flow 45,000 or 92 percent and Lostine 124,000 or 93 percent for the same period. The Imnaha is forecast at 93 percent or 272,000 acre feet for the April-September period.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope	Average	Average
Baker Valley	Average	Average
Big Creek	Average	Average
Clover Cr. (nr. No. Powder)	Average	Average
Cove	Average	Average
Durkee	Average	Average
Eagle Valley	Average	Average
Elgin	Average	Average
Enterprise-Joseph	Average	Average
Hereford-Bridgeport	Average	Average
Imnaha River	Average	Average
LaGrande-Island City	Average	Average
Lostine-Wallowa	Average	Average
No. Powder River-Wolf Cr.	Average	Average
Pine Valley	Average	Average
Powder River-Elk Creek	Average	Average
Summerville	Average	Average
Sumpter Valley	Average	Average
Union-Hot Lake	Average	Average
Unity	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Unity	25.2	25.2	25.8	21.8
Wallowa Lake	37.5	24.3	29.2	18.7

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

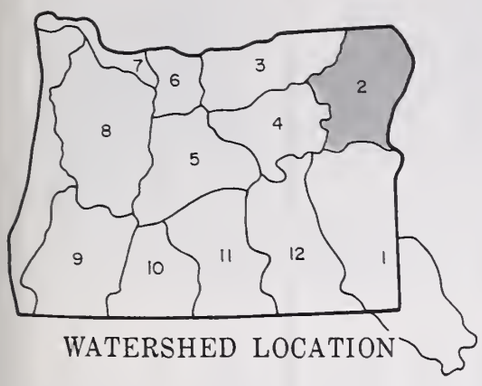
FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
3305	Bear near Wallowa	65	April-Sept.	74	88
2730	Burnt near Hereford[d]	17.0	May-Sept.	19.0	90
3200	Catherine near Union	51	May-Sept.	57	89
3190	Grande Ronde at LaGrande	105	May-Sept.	119	88
3295	Hurricane near Joseph	45	April-Sept.	49	92
2920	Imnaha at Imnaha	272	April-Sept.	314	87
3300	Lostine near Lostine	124	April-Sept.	133	93
2755	Powder near Baker	41	May-Sept.	44	93
		40	May-July	43	93
3250	Wallowa, East Fork near Joseph[d]	10.5	May-Sept.	11.3	93

SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Summit	5100	36	16.8	4-30-64	14.2	15.7	11.4
Emigrant Springs	3925	48	22.3	4-27-64	22.0	20.9	21.5
Tollgate	5070	48	23.6	4-29-64	19.6	21.2	21.4

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



WATERSHED LOCATION

10 0 10 20 30
SCALE IN MILES

WASHINGTON

OREGON

IDAHO

UMATILLA

UNION

WALLOWA

GRANT

BAKER

MALHEUR

46°00'

45°00'

117°00'

118°00'

TOLLGATE

Looking Glass

Elgin

Wallowa

Summerville

MEACHAM

La Grande

3190

Starkey

LUCKY STRIKE

SCHOOLMARM

COUNTY LINE

BEAVER RES.

Cave

MOSS SPRING

Union

BALD MTN.

3200

LADD SUMMIT

THIEF VALLEY RES.

North Powder

Medical Springs

LITTLE ALPS

ANTHONY LAKE

Haines

EILERTSON MEADOWS

GOURNE

GOLD CENTER

GOODRICH LAKE

Baker

Sumpter

TIPTON

BLUE MTN SUMMIT

WILLY RES.

2730

2755

COOLEY MTN.

Hereford

Bridgeport

Unity

BARNEY CREEK

ELDORADO PASS

Enterprise

3303

3300

†TV RIDGE

3295

†STANDLEY

Joseph

WALLOWA LAKE RES.

3250

ANEROID LAKE NO. 2

ANEROID LAKE NO. 1

†BIG SHEEP

Imnaha

2920

TAYLOR GREEN

SCHNEIDER MEADOWS

Keating

Halfway

Pine

Richland

Durkee

Huntington

ORE. 3

ORE. 82

ORE. 204

US 30

ORE. 86

SNAKE RIVER

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- ● Snow Course
- ⚑ Soil Moisture Station
- † Aeriol Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Aneroid Lake #1	7480	4/30	85	35.9	35.6	41.2[m]
Aneroid Lake #2	7000	4/30	75	31.0	29.1	30.4[m]
Anthony Lake	7125	4/27	88	32.8	24.4	- -
Bald Mountain[e] (Ore.)	6700	4/29	82	33.6	- -	- -
Barney Creek	5950	[c]				
Beaver Reservoir	5340	4/27	29	11.3	7.4	7.3[m]
Big Sheep[e]	6200	4/27	55	23.1	16.8	- -
Blue Mountain Summit	5098	4/30	5	2.0	0.3	1.9[m]
Bourne	5800	4/29	20	9.1	6.0	- -
County Line	4800	[b]				
Dooley Mountain	5430	4/24	13	3.4	0.0	- -
Eilertson Meadows	5400	4/27	20	7.6	1.9	- -
Eldorado Pass	4600	4/30	0	0.0	0.0	- -
Gold Center	5340	4/29	8	3.7	1.4	- -
Goodrich Lake	6775	[b]				
Little Alps	6200	4/27	50	16.5	9.4	- -
Lucky Strike	5050	4/25	36	12.5	10.1	- -
Meacham	4300	4/27	14	5.8	0.0	2.6[m]
Mirror Lake[e]	8200	4/27	208	87.4	60.9	- -
Moss Spring	5850	4/28	68	28.0	11.5	- -
Schneider Meadows	5400	4/29	52	24.8	19.1	- -
Schoolmarm	4775	[b]				
Standley[e]	7400	4/27	106	43.5	22.4	- -
Taylor Green	5740	[c]				
Tipton	5100	4/30	T	T	0.0	1.8[m]
Tollgate	5070	4/29	68	32.9	9.1	18.3[m]
TV Ridge[e]	5670	4/27	3	1.0	T	- -

"The Conservation of Water begins with the Snow Survey"

Area 3

WATER SUPPLY OUTLOOK
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 irrigation season opened in Umatilla, Morrow and Gilliam counties with cool, dry weather retarding the first month's streamflow. The water supply outlook for the remainder of the season, May through September, is near average, except for lands served from McKay Reservoir which will likely have a short water supply late in the season.

SNOW COVER

Snowmelt has been delayed by cool weather during April and water content of the snowpack at higher elevations was 173 percent of average on May 1 and a little over three times last years May 1 amounts.

SOIL MOISTURE

Watershed soil moisture now averages 89 percent of capacity but lower elevations below the snow line are considerably drier and dry land crops are beginning to suffer from the lack of precipitation in some areas.

RESERVOIR STORAGE

Cold Springs Reservoir is reported still full and able to maintain sufficient inflow to offset the irrigation demands.

McKay Reservoir received 13,663 acre feet inflow during April making May 1 storage 35,400 acre feet. This is still considerably short of the required amount needed to supply water users with a good water supply.

STREAMFLOW

April streamflow was 5 to 20 percent below average as a result of cool temperatures at the higher elevations and below normal precipitation in the valley.

Streamflow forecasts now range from 95 percent or 4,700 a.f. on the Butter Creek, to 103 percent or 60,000 acre feet on the South Fork Walla Walla at Milton for the May through September period.

McKay Creek is expected to flow 13,000 acre feet or 96 percent of the 1943-57 average. This amount coupled with the 35,400 a.f. in storage will make a total for the season of about 48,000 acre feet which will be short of the amount needed to supply all water requirements.

The Umatilla near Gibbon is forecast at 97 percent or 57,000 acre feet and Umatilla at Pendleton 95 percent or 95,000 acre feet for the May-September period.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE · PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek	Average	Average
Butter Creek	Average	Average
Dry Creek	Average	Average
Dugger Creek	Average	Average
Johnson Creek	Average	Average
McKay Creek	Average	Average
Mill Creek	Average	Average
Mud Creek	Average	Average
Pine Creek	Average	Average
Rhea Creek	Average	Average
Rock Creek	Average	Average
Umatilla River (Cold Springs Reservoir)	Average	Average
Umatilla River, Main	Average	Average
Umatilla River (McKay Res.)	Average	Fair-Poor
Walla Walla River, Little	Average	Average
Walla Walla River, Main	Average	Average
Walla Walla River, No. Fork	Average	Average
Walla Walla River, So. Fork	Average	Average
Willow Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	50.0	50.0	48.8
McKay	73.8	35.4	59.5	66.4

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
0320	Butter Creek near Pine City	4.7	May-Sept.	4.9	95
0225	McKay near Pilot Rock	13.0	May-July	13.5	96
0200	Umatilla near Gibbon	57	May-Sept.	59	97
0210	Umatilla at Pendleton	95	May-Sept.	99	96
		91	May-July	94	97
0100	Walla Walla, South Fork near Milton	60	May-Sept.	58	103
		46	May-July	44	104

SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Athena-Weston	1700	48	18.7	4-29-64	14.4	16.0	15.7
Battle Mountain Summit	4340	48	13.8	4-25-64	13.7	13.7	13.2
Emigrant Springs	3925	48	22.3	4-27-64	22.0	20.9	21.5
Tollgate	5070	48	23.6	4-29-64	19.6	21.2	21.4

SNOW

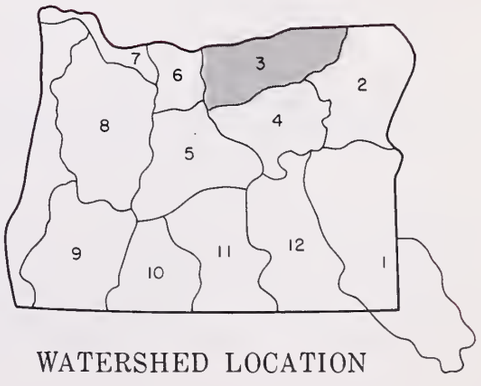
SNOW COURSE NAME	SNOW COURSE ELEVATION	CURRENT INFORMATION DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Arbuckle Mountain	5400	4/28	20	8.1	1.8	- -
Battle Mountain Summit	4340	4/25	5	0.8	1.0	- -
Blue Mountain Camp	4300	4/29	28	12.8	0.0	- -
Emigrant Springs	3925	4/27	1	0.4	0.0	1.6 [m]
Lucky Strike	5050	4/25	36	12.5	10.1	- -
Meacham	4300	4/27	14	5.8	0.0	2.6 [m]
Tollgate	5070	4/29	68	32.9	9.1	18.3 [m]
Weston Mountain	2700	4/29	0	0.0	0.0	- -

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station



WATERSHED LOCATION

Umatilla, Walla Walla, Willow, Rock, Lower John Day Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UPPER JOHN DAY WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for the Upper John Day basin is for near average water supplies although April flows have been well below average. The below average precipitation and temperatures retarded April streamflow and dry, lower watershed soils, not snow covered, are not providing usual good early grazing.

SNOW COVER

Water content of the snowpack at high elevations has not melted as fast as usual and is still 116 percent of the May 1 average and 141 percent of last year at this time.

SOIL MOISTURE

Soil moisture stations higher on the watershed gained from 2 to 4.5 inches of moisture during April and average 86 percent of total capacity now. These upper watershed soils are now fairly well wetted and should aid runoff from future storms or snowmelt. Lower elevation soils are beginning to dry out and need rain to sustain good grass yields.

STREAMFLOW

Preliminary data from the U. S. Geological Survey in Portland indicates the flow of the John Day at Service Creek has been only 62 percent of average during April and averages only 49 percent for the October-April period.

Streamflow forecasts remain unchanged for the April-September period counting heavily on the good high elevation snowpack to produce good flows later in the season than usual. The forecast for the John Day at Prairie City is 51,000 a.f. or 95 percent of average, the Middle Fork at Ritter 130,000 acre feet or 96 percent, and Strawberry Creek is expected to flow 8,600 acre feet or 95 percent for the April-September period.

Smaller streams heading at lower elevations may flow somewhat less than average unless much needed precipitation occurs during the season.

Report prepared by
W.T. FROST AND BOB L. #HALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek	Average	Fair
Beech Creek-Fox-Long Cr.	Average	Fair
Bridge-Mountain Creeks	Average	Fair
Camas Creek	Average	Average
Cherry Creek	Average	Average
Indian-Pine Creeks	Average	Average
John Day River, Main Fork	Average	Average
John Day River, Mid. Fork	Average	Average
John Day River, N. Fork	Average	Average
John Day River, S. Fork	Average	Average
Monument-Kimberly	Average	Average
Strawberry Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
0385	John Day at Prairie City	51	April-Sept.	54	95
		47	April-July	49	96
0440	John Day, Middle Fork at Ritter	130	April-Sept.	135	96
		126	April-July	131	96
0375	Strawberry near Prairie City	8.6	April-Sept.	9.1	95

SOIL MOISTURE

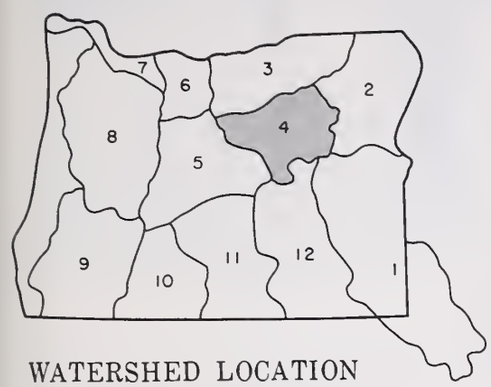
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Battle Mountain Summit	4340	48	13.8	4-25-64	13.7	13.7	13.2
Blue Mountain Springs	5900	42	16.9	4-28-64	12.5	14.0	14.4
Blue Mountain Summit	5100	36	16.8	4-30-64	14.2	15.7	11.4
Marks Creek	4540	36	14.1	4-28-64	13.4	13.5	13.3
Snow Mountain	6300	48	16.7	3-31-64	12.4[f]	14.9[f]	15.1[f]
Starr Ridge	5150	36	10.6	4-28-64	10.6	10.6	10.3

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Anthony Lake	7125	4/27	88	32.8	24.4	- -
Arbuckle Mountain	5400	4/28	20	8.1	1.8	- -
Battle Mountain Summit	4340	4/25	5	0.8	1.0	- -
Beech Creek Summit	4800	4/27	0	0.0	2.1	- -
Blue Mountiin Springs	5900	4/28	.6	10.4	10.8	6.7[m]
Blue Mountain Summit	5098	4/30	5	2.0	0.3	1.9[m]
Derr	5670	c				
East Fork Canyon[e]	5700	5/3	18	7.2	2.9	- -
Gold Center	5340	4/29	8	3.7	1.4	- -
Indian Creek Butte[e]	6550	5/3	42	16.8	18.7	- -
Izee Summit	5293	4/28	5	2.5	1.7	1.6[m]
Lucky Strike	5050	4/25	36	12.5	10.1	- -
Marks Creek	4540	4/28	0	0.0	0.0	- -
Ochoco Meadows	5200	c				
Olive Lake	6000	4/28	55	21.4	12.3	- -
Schoolmarm	4775	c				
Snow Mountain	6300	c				
Starr Ridge	5150	4/28	0	0.0	1.0	0.9[m]
Tipton	5100	4/30	T	T	0.0	1.8[m]
Williams Ranch	4500	c				

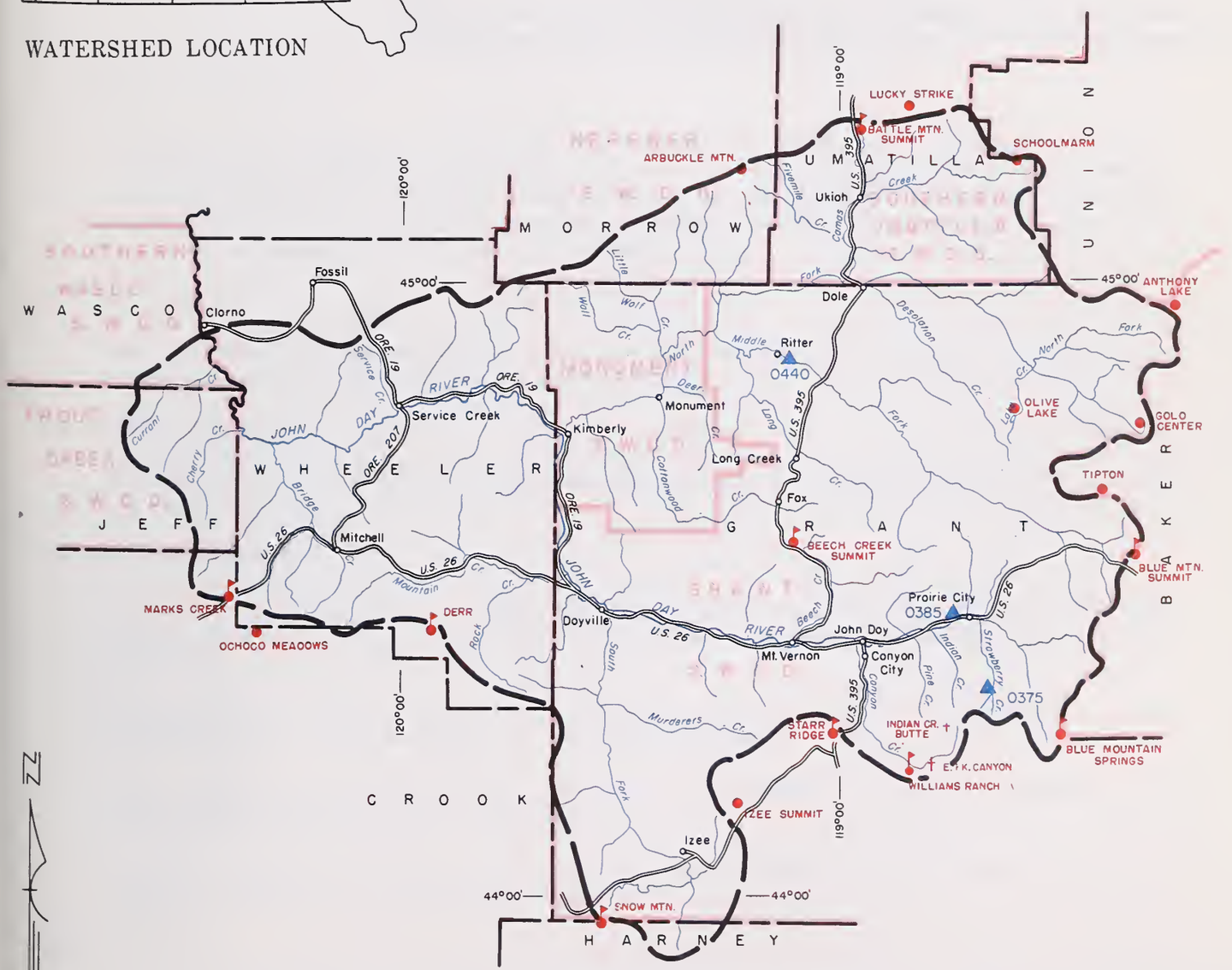
(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

UPPER JOHN DAY WATERSHEDS



WATERSHED LOCATION

10 0 10 20 30
SCALE IN MILES



N

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- ● Snow Course
- ⚑ Soil Moisture Station
- † Aerial Snow Depth Gage

Upper John Day Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UPPER DESCHUTES, CROOKED WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for the remaining months of the irrigation season in Jefferson, Deschutes and Crook counties is near average. Cool April temperatures retarded streamflow causing early use of reservoir water, but reservoir storage is about average. Prospective streamflow for the remainder of the season is expected to be 80 to 93 percent of average.

SNOW COVER

Water content of the snowpack averages 101 percent of the May 1 average and about 210 percent of last year at this time.

SOIL MOISTURE

Watershed soils continued to gain moisture and are now about 84 percent of total capacity.

RESERVOIR STORAGE

Crooked River reservoirs, Ochoco and Prineville, now hold 34,400 and 136,000 acre feet respectively. This is a very adequate supply for Crooked River water users.

Wickiup Reservoir now holds 176,700 acre feet compared with 199,900 a.f. last year on May 1. The average is 140,400 acre feet.

Crane Prairie now holds 37,400 acre feet. Last year it contained 50,800 and the average is 47,600 acre feet for May 1.

Crescent Lake has 55,600 acre feet in storage compared with 67,400 last year and a May 1 average of 47,100 acre feet.

STREAMFLOW

Flow of the Deschutes at Benham Falls is expected to be 88 percent or 530,000 a.f. for the April-September period.

Crane Prairie inflow is forecast at 94 percent of average or 135,000 acre feet for the same period.

The Little Deschutes is expected to flow 106,000 acre feet or 94 percent and Odell and Crescent creeks 91 and 93 percent respectively.

continued on next page

Report prepared by
W.T. FROST AND BOB L. AHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

continued from preceding page

Squaw and Tumalo creeks are forecast at 94 and 80 percent for the April-September period.

Crooked River is expected to flow 42,000 acre feet or 84 percent and Ochoco Reservoir net inflow is expected to be 12,800 or 80 percent for the May-September period.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	Average
Bear Creek	Average	Average
Beaver Creek	Average	Average
Camp Creek	Average	Average
Central Ore. Irrig. Dist.	Average	Average
Crooked River	Average	Average
Deschutes River	Average	Average
Hay-Trout Creeks	Average	Average
Lone Pine Irrig. Dist.	Average	Average
Mill Creek	Average	Average
North Unit Irrig. Dist.	Average	Average
Ochoco Creek	Average	Average
Sisters Irrigation Dist.	Average	Average
Snow Creek Irrig. Dist.	Average	Average
Squaw Creek Irrig. Dist.	Average	Average
Swalley Ditch	Average	Average
Tumalo Project	Average	Average
Walker Basin Irrig. Dist.	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	37.4	50.8	47.6
Crescent Lake	117.2	55.6	67.4	47.1
Ochoco	47.5	34.4	43.6	39.7
Prineville	153.0	136.0	146.4	- -
Wickiup	182.0	176.7	199.9	140.4

Note:

Current storage figure for Crescent Lake includes 5360 acre feet of known dead and inactive storage.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

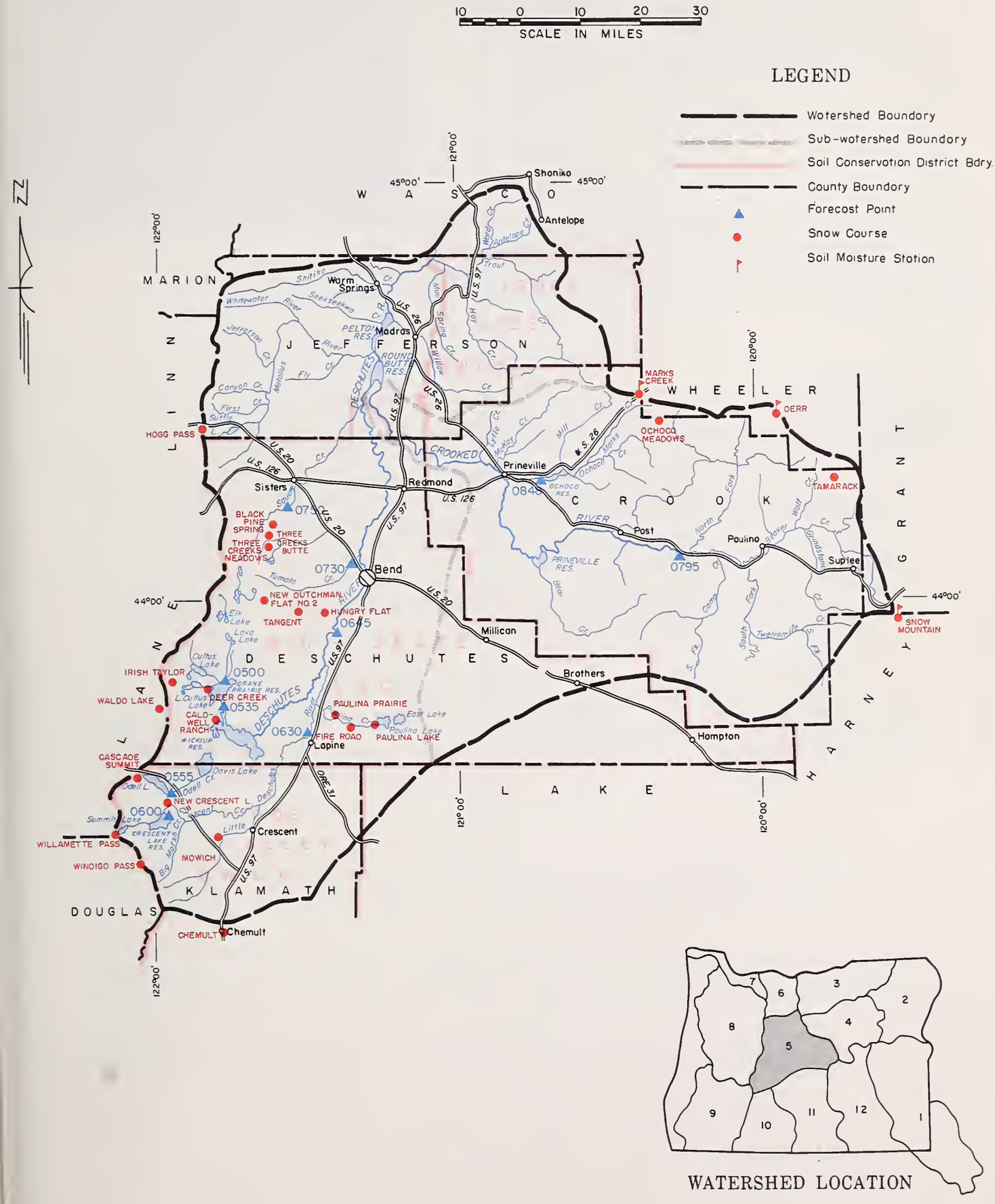
FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
0535	Crane Prairie Reservoir total Inflow	135	April-Sept.	143	94
0600	Crescent at Crescent Lake[d]	29	April-Sept.	41	93
		23	April-July	25	93
0795	Crooked near Post	42	May-Sept.	50	84
		41	May-July	48	85
0645	Deschutes at Benham Falls[d]	530	April-Sept.	602	88
		355	April-July	404	88
0500	Deschutes below Snow Creek	62	May-Sept.	67	93
0630	Deschutes, Little near Lapine[d]	106	April-Sept.	113	94
		95	April-July	100	95
0848	Ochoco Reservoir net Inflow	12.8	May-Sept.	16.0	80
0555	Odell near Crescent	31	April-Sept.	34	91
0750	Squaw near Sisters	52	April-Sept.	55	94
0730	Tumalo near Bend[d]	49	April-Sept.	55	89

SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	SOIL MOISTURE (Inches) THIS YEAR	SOIL MOISTURE (Inches) LAST YEAR	SOIL MOISTURE (Inches) 2 YEARS AGO
Marks Creek	4540	36	14.1	4-28-64	13.4	13.5	13.3
Snow Mountain	6300	48	16.7	3-31-64	12.4[f]	14.9[f]	15.1[f]

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

UPPER DESCHUTES, CROOKED WATERSHEDS



WATERSHED LOCATION

Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Black Pine Spring	4600	4/30	0	0.0	0.0	0.8 m
Caldwell Ranch	4400	c				
Cascade Summit	4880	4/29	72	34.3	10.2	31.8 m
Chemult	4760	4/27	2	0.9	0.0	0.5 m
Derr	5670	c				
Fire Road	5050	4/29	4	1.7	1.3	- -
Hogg Pass	4755	4/29	110	50.7	22.6	53.5 m
Hungry Flat	4400	4/29	0	0.0	0.0	0.0
Irish-Taylor	5500	c				
Marks Creek	4540	4/28	0	0.0	0.0	- -
Mowich	4700	4/28	0	0.0	0.0	- -
New Crescent Lake	4800	4/28	21	9.7	0.0	6.3 m
New Dutchman Flat #2	6400	4/29	116	54.6	36.1	59.0 h
Ochoco Meadows	5200	c				
Paulina Lake	6330	4/29	39	18.1	15.3	- -
Paulina Prairie	4285	4/29	0	0.0	0.0	- -
Snow Mountain	6300	c				
Tamarack	4800	c				
Tangent	5400	4/29	34	16.2	4.8	11.9 h
Three Creeks Butte	5200	4/30	8	3.2	0.0	- -
Three Creeks Meadows	5600	4/30	38	18.1	T	16.8 m
Waldo Lake	5500	c				
Willamette Pass	5600	4/27	102	46.5	27.4	45.9 h
Windigo Pass	5800	4/28	104	51.3	27.4	52.5 m

"The Conservation of Water begins with the Snow Survey"

Area 6

WATER SUPPLY OUTLOOK
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
OREGON

as of

MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for Hood River and Wasco counties is good. Cool April weather has delayed snowmelt and improved prospects for later streamflow.

SNOW COVER

Water content of the snowpack is now 133 percent of the May 1 average and a little over three times last year's May 1 amounts.

SOIL MOISTURE

Watershed soils are well wetted and will aid runoff from subsequent storms or snowmelt.

RESERVOIR STORAGE

Clear Lake now holds only 2,300 acre feet and last year held 5,600 acre feet on May 1. This storage is low, but with the good snowpack still remaining on the watershed, it should improve significantly once temperatures warm up enough to allow good snowmelt runoff.

STREAMFLOW

Cool temperatures delayed streamflow in this area during April. The Hood near Hood River* flowed 75 percent of average for the month and only 79 percent for the October 1 - May 1 period.

Streamflow forecasts range from 280,000 acre feet or 104 percent of the May-September average for the Hood near Hood River to 108 percent or 134,000 acre feet for the West Fork near Dee. White River is expected to flow 135,000 acre feet or 104 percent of average for the same period.

*Preliminary data from U. S. Geological Survey, Portland, Oregon.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch	Average	Average
Badger Creek	Average	Average
Dee Irrigation District	Average	Average
East Fork Irrig. Dist.	Average	Average
Farmers Irrig. Dist.	Average	Average
Hood River Irrig. Dist.	Average	Average
Juniper Flat Irrig. Dist.	Average	Average
Middle Fork Irrig. Dist.	Average	Average
Mile Creeks	Average	Average
Mill Creek	Average	Average
Mount Hood Irrig. Dist.	Average	Average
Rock-Gate-Threemile Crs.	Average	Average
Tygh Creek	Average	Average
White River	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	11.8	2.3	5.6	- -

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
1210	Hood near Hood River[d]	280	May-Sept.	268	104
		225	May-July	213	106
1185	Hood, West Fork near Dee	134	May-Sept.	124	108
		112	May-July	102	110
1015	White below Tygh Valley	135	May-Sept.	130	104
		120	May-July	113	106

SNOW

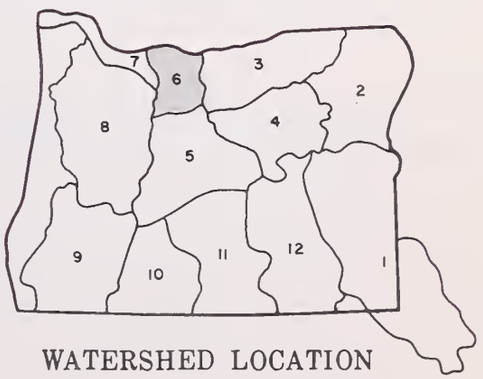
SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Brooks Meadows	4300	c				
Clear Lake	3500	4/28	24	10.2	0.8	11.8[m]
Clear Lake (Experimental)	3500	4/28	40	17.2	3.1	- -
Cooper Spur	3490	c				
Greenpoint Reservoir	3400	4/30	20	8.4	- -	- -
Knebal Springs	3850	c				
Lambert Point	7000	c				
Parkdale	1770	c				
Phlox Point	5600	4/28	220	94.5	35.9	72.1[h]
Red Hill	4400	c				
Still Creek	3700	4/28	74	34.8	7.1	21.2[m]
Switchback	3255	5/1	36	16.4	- -	- -
Tilly Jane	6000	c				
Ulrich Ranch Junction	3350	c				
Umbrella Falls	5400	4/30	185	83.2	43.2	- -
Upper Valley	2530	c				

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundory
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- Soil Moisture Station



WATERSHED LOCATION

Hood, Mile Creeks, Lower Deschutes Watersheds

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
LOWER COLUMBIA WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Water supply outlook is good throughout the Columbia Basin for both irrigation and power. Streamflow forecasts for the main stream and its principal tributaries are slightly above average except for the upper Snake where forecasts are near average. Irrigation reservoirs will fill during the snowmelt season with only minor exceptions in eastern Oregon.

SNOW COVER

The remaining snow cover on May 1 is much above average on the upper Columbia and its tributaries except for the upper Snake in southern Idaho. Precipitation during April has been near or slightly above average at medium and higher elevations, and temperatures have been extremely low. The start of snowmelt at medium and high elevations has been delayed. Snow water contents measured as of May 1 for the whole upper basin are high, comparable to the heavy runoff years of 1950 and 1956. Cool temperatures have persisted through the first six days of May, and snowpack at high elevations continues to increase. Snowpack also exceeds that for May 1, 1948, but the unusual increases in snowpack and the temperature sequences that occurred after this date in 1948 have a remote chance of being repeated this year.

Snowpack ranges from about 110 percent of average on the Kootenai up to 140 percent of average on the Yakima, Clearwater and Spokane river watersheds. Large increases in snowpack have occurred along the Continental Divide in Montana from early May storms.

SOIL MOISTURE

Soils tend to be wet under the snowpack, which is typical for this date.

STREAMFLOW

Streamflow over the upper basin has been deficient during the winter months, and especially so on Snake River tributaries. The trend to below average streamflow has persisted through April.

continued on page 7d

Report prepared by
HOMER J. STOCKWELL
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. Fifth Avenue - Portland 4, Oregon

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
1057	Columbia at The Dalles	95,000 60,500	May–Sept. May–June	92,000 58,000	103 104

HISTORICAL DATA (Columbia River at The Dalles)

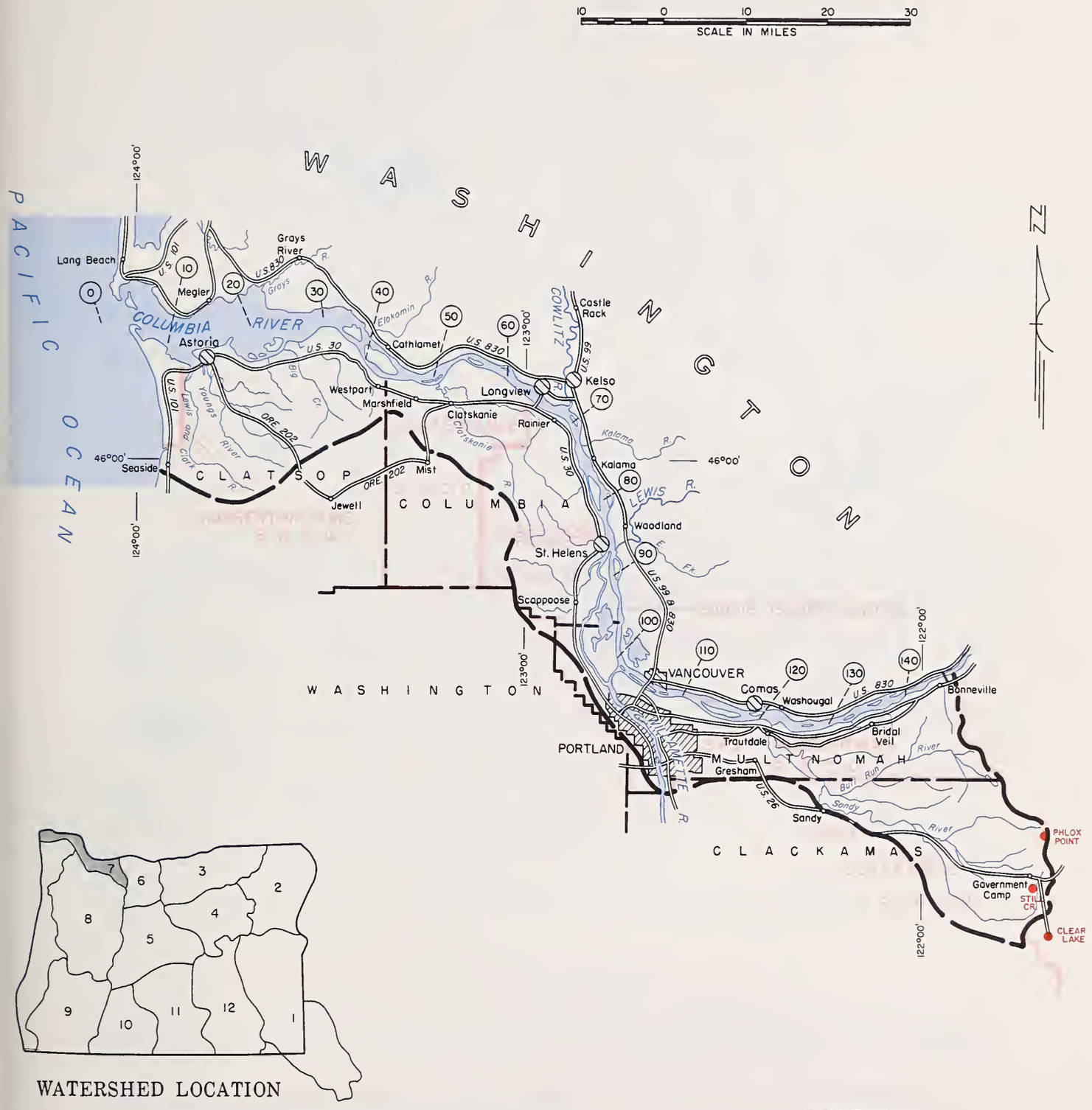
YEAR	STREAMFLOW[d] (1,000 A.F.) APR.— SEPT.	APR.— JUNE	MAY—JUNE	PEAK (1,000 c.f.s)	DATE
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943–57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6
1961	101,400	74,400	64,000	699	June 8
1962	94,600	64,100	49,200	460	June 5

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

VANCOUVER GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s)	DRAINAGE DISTRICT PUMPHOUSE						
		SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES						
		118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	940	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	890	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	840	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	790	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	750	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	700	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	660	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	630	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	590	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	560	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20	530	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	510	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	480	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	450	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	430	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records.

LOWER COLUMBIA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- (50) River Miles
- Snow Course

continued from page 7a

The flow of the Columbia River at The Dalles, Oregon* in percent of normal by months is as follows:

Month	Percent of Average Discharge (1943-57)	
October	87	Adjusted for storage
November	85	" " "
December	74	" " "
January	79	" " "
February	66	" " "
March	66	" " "
April	69	" " "

*Preliminary data furnished by Current Records Center, U. S. Geological Survey, Portland, Oregon.

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
WILLAMETTE WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for the Willamette Valley is "near average." Cooler than average April temperatures retarded snowmelt and caused a continued build up of snow at higher elevations along the ridge of the Cascades.

SNOW COVER

Water content of the snowpack is 116 percent of the May 1 average and better than three times the amounts measured last year at this time. Snow continued to accumulate at higher elevations and Phlox Point snow course on Mount Hood had a record high May 1 snow depth with only year, 1950, having a greater water content.

SOIL MOISTURE

Watershed soils are well primed at higher elevations and should aid runoff from snowmelt.

RESERVOIR STORAGE

Willamette Valley reservoirs are filling according to a pre-determined flood control plan designated by the Corps of Engineers.

Timothy Lake now holds 44,200 acre feet compared with 74,900 at this time last year according to data furnished by Portland General Electric Co.

STREAMFLOW

Forecasts of streamflow for the April-September period range from 92 percent or 5,008,000 acre feet on the Willamette at Salem to 99 percent or 900,000 a.f. for the Middle Fork of the Willamette.

The McKenzie is expected to flow 97 and 96 percent at McKenzie Bridge and Vida respectively and the Row River 98 percent.

The Santiam is forecast at 96 and 97 percent for the North and South Forks.

The Clackamas at Big Bottom is expected to flow 180,000 acre feet or 98 percent of the April-September average and the Clackamas at Estacada 850,000 or 97 percent for the same period.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya	Average	Average
Clackamas	Average	Average
McKenzie	Average	Average
Molalla	Average	Average
Santiam, North	Average	Average
Santiam, South	Average	Average
Willamette, Coast Fork	Average	Average
Willamette, Middle Fork	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.8*	23.0	24.4	27.0
Cougar	219.3*	74.5	- -	- -
Detroit	299.9*	30.9	266.1	189.5
Dorena	70.5*	55.9	57.7	52.4
Fern Ridge	94.2*	77.1	93.6	82.6
Hills Creek	249.0*	161.0	185.0	- -
Lookout Point	337.2*	263.5	299.9	- -
Timothy Lake	61.6	44.2	74.9	- -

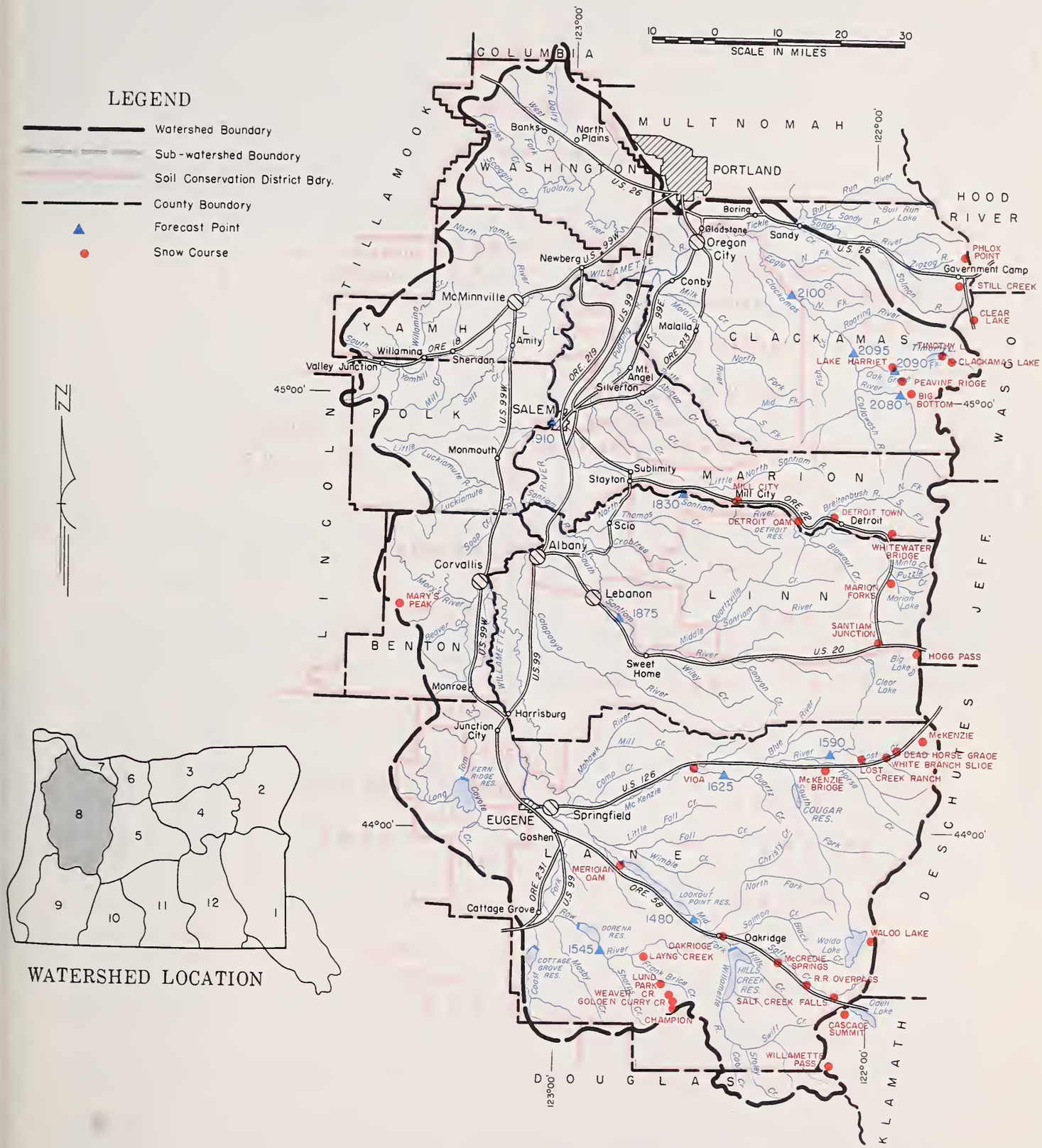
*Multiple purpose reservoir--space reserved primarily for flood runoff.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
2080	Clackamas at Big Bottom	180	April-Sept.	184	98
		147	April-July	150	98
2100	Clackamas at Estacada	850	April-Sept.	879	97
		740	April-July	763	97
2095	Clackamas above Three Lynx	650	April-Sept.	674	96
		555	April-July	578	96
1590	McKenzie at McKenzie Bridge	620	April-Sept.	640	97
		475	April-July	488	97
1625	McKenzie near Vida	1300	April-Sept.	1362	96
		1075	April-July	1120	96
2090	Oak Grove Fork above Power Intake	190	April-Sept.	198	96
		150	April-July	156	96
1545	Row near Dorena	112	April-Sept.	114	98
		107	April-July	109	98
1830	Santiam, North at Mehama[d]	930	April-Sept.	968	96
		830	April-July	866	96
1875	Santiam, South at Waterloo	630	April-Sept.	652	97
		595	April-July	616	97
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	900	April-Sept.	909	99
		805	April-July	804	100
1910	Willamette at Salem[d]	5008	April-Sept.	5461	92
		4595	April-July	4942	93

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

WILLAMETTE WATERSHEDS



SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Big Bottom	2118	5/2	0	0.0	0.0	2.2 m
Cascade Summit	4880	4/29	72	34.3	10.2	31.8 m
Champion	4500	4/30	81	36.6	14.3	- -
Clackamas Lake	3400	c				
Clear Lake	3500	4/28	24	10.2	0.8	11.8 m
Clear Lake (Experimental)	3500	4/28	40	17.2	3.1	- -
Dead Horse Grade	3800	5/1	64	27.4	2.9	- -
Detroit Town	1610	4/29	0	0.0	0.0	0.0 m
Detroit Dam	1580	4/29	0	0.0	0.0	0.0 m
Golden Curry Creek	3136	4/30	26	11.8	1.4	- -
Hogg Pass	4755	4/29	110	50.7	22.6	53.5 m
Lake Harriet	2045	5/2	0	0.0	0.0	0.0 m
Layng Creek	1200	4/30	0	0.0	0.0	- -
Lost Creek Ranch	1956	5/1	0	0.0	0.0	- -
Lund Park	1740	4/30	0	0.0	0.0	- -
Marion Forks	2730	P L O W E D O U T				
Marys Peak	3620	5/3	44	17.5	10.5	- -
McCredie Springs	2120	4/29	0	0.0	0.0	0.0 m
McKenzie	4800	5/1	128	57.8	19.1	- -
McKenzie Bridge	1372	5/1	0	0.0	0.0	- -
Meridian Dam	750	4/29	0	0.0	0.0	0.0 m
Mill City	826	4/29	0	0.0	0.0	0.0 m
Oakridge	1310	4/29	0	0.0	0.0	0.0 m
Peavine Ridge	3500	5/1	56	25.0	4.2	21.0 m
Phlox Point	5600	4/28	220	94.5	35.9	72.1 h
Railroad Overpass	2750	4/29	0	0.0	0.0	0.1 m
Salt Creek Falls	4000	4/29	51	22.8	3.1	16.2 m
Santiam Junction	3990	4/29	46	20.9	5.3	18.2 m
Still Creek	3700	4/28	74	34.8	7.1	21.2 m
Timothy Lake	3295	5/1	46	20.4	1.2	- -
Vida	800	5/1	0	0.0	0.0	- -
Waldo Lake	5500	c				
Weaver Creek	2440	4/30	0	0.0	0.0	- -
White Branch Slide	2800	5/1	0	0.0	0.0	- -
Whitewater Bridge	2175	4/29	0	0.0	0.0	T m
Willamette Pass	5600	4/27	102	46.5	27.4	45.9 h

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
ROGUE, UMPQUA, WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for the Rogue-Umpqua basins is good for all water users. Reservoir storage is above average and expected streamflow for the remainder of the season is near average.

SNOW COVER

Water content of the snowpack is 100 percent of the May 1 average for the 1943-57 period and about twice the amount measured last year on May 1.

SOIL MOISTURE

Watershed soils continued to gain moisture from snowmelt and are now well primed especially at medium to high elevations.

RESERVOIR STORAGE

Fish and Fourmile Lakes now hold 19,100 acre feet for use by the Medford and Rogue River Valley Irrigation Districts compared with 16,900 acre feet last year at this time. This should be an adequate water supply coupled with subsequent streamflow.

Hyatt, Howard, and Emigrant reservoirs now hold a total of 111,200 acre feet for use by the Talent Irrigation District. Last year these reservoirs held 108,500 a.f. on May 1. Coupled with remaining streamflow, this will provide a good water supply for Talent water users.

STREAMFLOW

Preliminary data from the U. S. Geological Survey, Portland, Oregon shows the Rogue at Raygold flowed about 89 percent of average during April. It is forecast to flow 700,000 acre feet or 95 percent of average for the May-September period.

The Rogue above Prospect is expected to flow 265,000 acre feet or 98 percent for the May-September period and the Rogue below South Fork 570,000 or 98 percent.

The Applegate and Illinois rivers are expected to provide near average water supplies this season with forecasts of 97 and 96 percent respectively for the April-September period. The flow of the North Umpqua and Clearwater rivers is forecast at 99 and 93 percent for the May-September period.

South Fork Little Butte Creek is not expected to drop to 100 cfs before June 11 with a volume of 43,000 acre feet for the April-July period.

Report prepared by
W.T. FROST AND BOR L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Foir" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Average	Average
Applegate River, Big	Average	Average
Applegate River, Little	Average	Average
Ashland Creek	Average	Average
Butte Creek, Little	Average	Average
Butte Creek, Big	Average	Average
Cow Creek	Average	Average
Deer Creek	Average	Average
Elk Creek	Average	Average
Emigrant Creek (above Res.)	Average	Average
Evans Creek	Average	Average
Gold Hill Irrigation Dist.	Average	Average
Grants Pass Irrig. Dist.	Average	Average
Grave Creek	Average	Average
Illinois River, East Fork	Average	Average
Illinois River, West Fork	Average	Average
Jump-off-Joe Creek	Average	Average
Neil Creek	Average	Average
Red Blanket Creek	Average	Average
Rogue River	Average	Average
Sucker Creek	Average	Average
Table Rock Irrig. Dist.	Average	Average
Thompson Creek	Average	Average
Wagner Creek	Average	Average
Williams Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

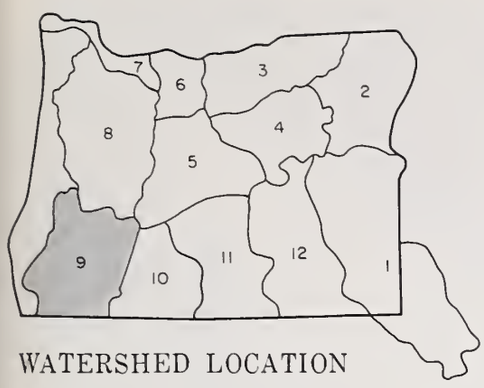
RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	38.2	38.6	7.7
Fish Lake	7.8	5.4	5.6	6.1
Fourmile Lake	16.1	13.7	11.3	10.8
Howard Prairie	60.0	58.0	53.7	- -
Hyatt Prairie	16.1	15.0	16.2	11.2

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
3620	Applegate near Copper	127	April-Sept.	131	97
3145	Clearwater above Trap Creek[d]	57	May-Sept.	61	93
5045	Fourmile Lake net Inflow[d]	7.1	April-Sept.	7.4	96
5140	Hyatt Reservoir net Inflow[d]	6.0	April-Sept.	6.2	97
3770	Illinois River at Kerby[d]	188	April-Sept.	196	96
		185	April-July	190	97
3425	Little Butte, N. Fk. at Fish Lake nr. Lake Cr.[d]	16.6	April-Sept.	16.9	98
3415	Little Butte, S. Fk. nr. Lake Creek	43	April-July	42	102
	Note: Minimum flow will drop to 100 c.f.s. by June 11.				
3280	Rogue above Prospect	265	May-Sept.	270	98
		208	May-July	211	99
3320	Rogue, South Fork near Prospect[d]	63	May-Sept.	65	97
		52	May-July	53	99
3350	Rogue below South Fork	570	May-Sept.	584	98
		435	May-July	443	98
3590	Rogue at Raygold near Central Point	700	May-Sept.	733	95
		550	May-July	571	96
3615	Rogue at Grants Pass	660	May-Sept.	687	96
3135	Umpqua, No. blw. Lemolo Res. nr. Toketee Falls	153	May-Sept.	155	99

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

ROGUE, UMPQUA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- ● Snow Course

SNOW

SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	CURRENT INFORMATION: SNOW DEPTH (Inches)	CURRENT INFORMATION: WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	PAST RECORD: WATER CONTENT (Inches) 1943-57 AVERAGE
Althouse	4530	c				
Annie Spring	6018	5/2	95	44.2	31.0	45.4
Beaver Dam Creek	5100	NOT SURVEYED			NOT SURVEYED	
Big Red Mountain	6500	c				
Billie Creek Divide	5300	4/30	50	22.0	2.8	18.4 h
Champion	4500	4/30	81	36.6	14.3	- -
Cold Springs Camp	6100	c				
Deadwood Junction	4600	c				
Diamond-Crater Summit	5800	4/29	69	31.8	19.6	- -
Diamond Lake	5315	4/29	45	17.4	7.3	17.8 h
Eden Valley Summit	2390	NOT SURVEYED			NOT SURVEYED	
Fish Lake	4865	NOT SURVEYED			NOT SURVEYED	
Fourmile Lake	6000	NOT SURVEYED			NOT SURVEYED	
Grayback Peak	6000	c				
Hobart Lake	5010	c				
Howard Prairie	4500	NOT SURVEYED			NOT SURVEYED	
Hyatt Prairie Reservoir	4900	c				
Little Red Mountain	6500	c				
North Umpqua near Lake Creek	4215	4/27	31	14.9	T	- -
Page Mountain	4045	c				
Park Headquarters	6450	5/2	127	60.1	48.8	60.7 h
Red Butte #1	4560	NOT SURVEYED			NOT SURVEYED	- -
Red Butte #2	4000	4/28	26	16.8	0.9	- -
Red Butte #3	3500	4/28	14	7.6	0.0	- -
Red Butte #4	3000	4/28	0	0.0	0.0	- -
Red Butte #5	2500	4/28	0	0.0	0.0	- -
Red Butte #6	2000	4/28	0	0.0	0.0	- -
Rye Spring Spur	5000	NOT SURVEYED			NOT SURVEYED	
Seven Lakes #1	6800	c				
Seven Lakes #2	6200	c				
Silver Burn	3720	5/1	13	5.0	0.4	- -
Siskiyou Summit	4630	c				
South Fork Canal	3500	4/30	0	0.0	0.0	- -
Trap Creek	3800	4/27	26	13.5	T	- -
Wagner Butte	6900	c				
Whaleback	5140	c				
Windigo Pass	5800	4/28	104	51.3	27.4	52.5 m

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
KLAMATH WATERSHEDS
OREGON

as of

MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook in Klamath Basin is "near average". Cool weather delayed snowmelt at higher elevations and most upper watershed soils are well wetted. Reservoir storage is near average except in Clear Lake.

SNOW COVER

Water content of the basin snowpack is now 108 percent of average and about 157 percent of last year at this time. Snow continued to fall along the ridge of the Cascades as a result of cooler than average temperatures as late as May 2.

SOIL MOISTURE

Watershed soils gained some much needed moisture and the Bly Mountain moisture station now indicates 90 percent of total capacity. Valley soils have started to lose moisture as a result of less than average precipitation over most of the valley.

RESERVOIR STORAGE

Upper Klamath Lake now contains 481,200 acre feet compared with 554,900 acre feet one year ago. The May 1 average is 497,700 acre feet.

Gerber and Clear Lake reservoirs, as reported by U. S. Bureau of Reclamation at Klamath Falls, now hold 66,500 and 166,200 acre feet respectively, compared with 65,100 and 155,400 last year at this time.

STREAMFLOW

Preliminary data from Pacific Power and Light Company indicates the April inflow to Upper Klamath Lake was about 196,400 acre feet or 98 percent of the 1943-57 average.

The May-September forecast for the inflow to Klamath Lake is 380,000 acre feet or 88 percent of average.

The Sprague is expected to contribute 170,000 and the Williamson below the Sprague, 297,000 acre feet respectively for the May-September period.

Clear Lake and Gerber reservoir inflows are expected to be 88 percent or 17,000 acre feet and 91 percent or 7,000 acre feet respectively.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley	Average	Average
Lost River (Clear Lake)	Average	Average
Lost River (Gerber)	Average	Average
Lost River (Willow Res.)	Average	Average
Sprague River	Average	Average
Upper Klamath Lake	Average	Average
Williamson River	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	166.2	155.4	279.0
Gerber	94.0	66.5	65.1	65.1
Upper Klamath Lake	584.0	481.2	554.9	497.7

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
823	Clear Lake Reservoir Inflow[k]	17.0	May-Sept.	19.3	88
8215	Gerber Reservoir Inflow[k]	7.0	May-Sept.	7.7	91
5010	Sprague near Chiloquin	170	May-Sept.	191	89
5070	Upper Klamath Lake net Inflow[k]	380	May-Sept.	431	88
5025	Williamson below Sprague River	297	May-Sept.	330	90

SOIL MOISTURE

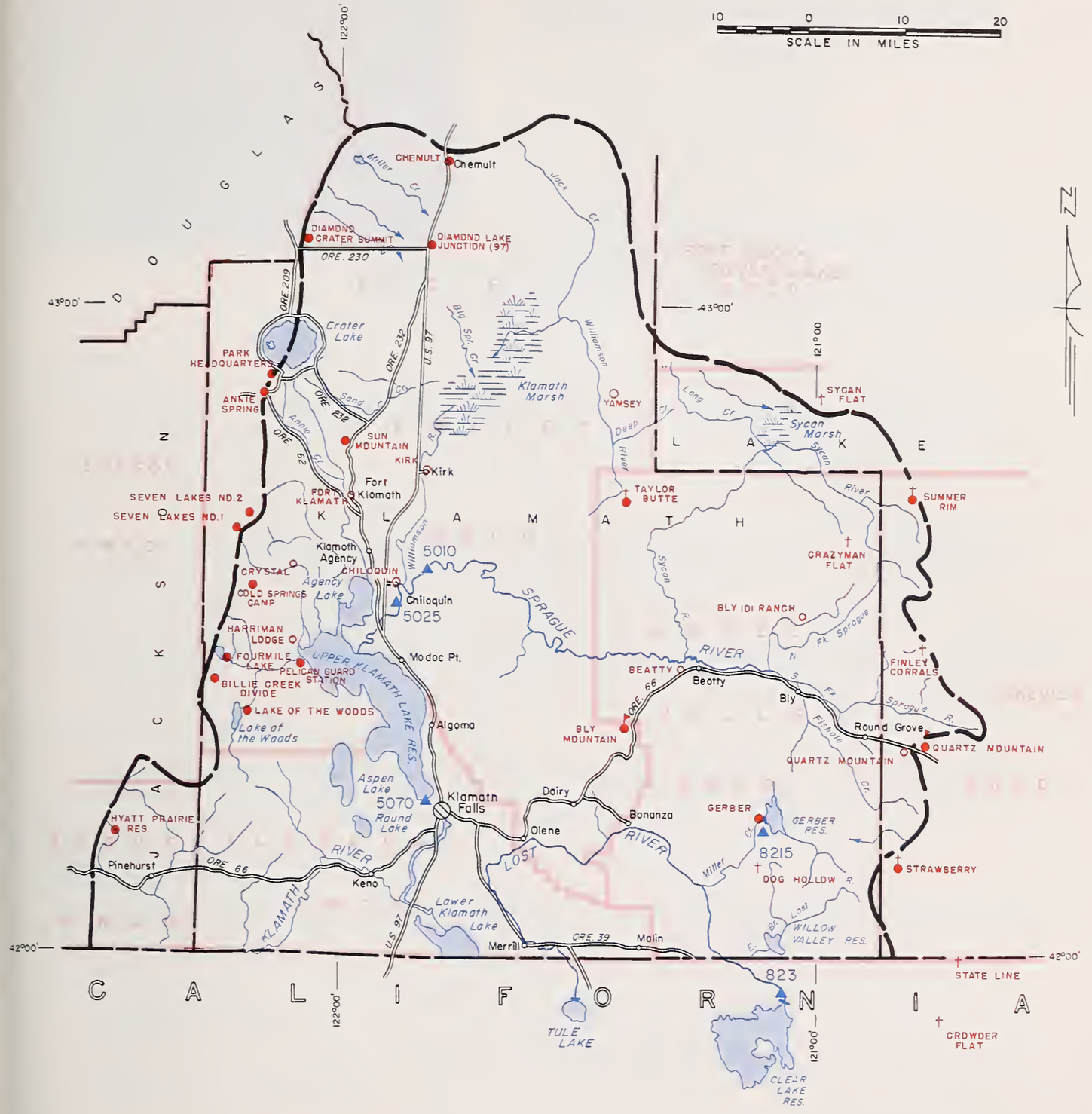
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bly Mountain	5090	42	14.0	4-30-64	12.6	12.9	12.6

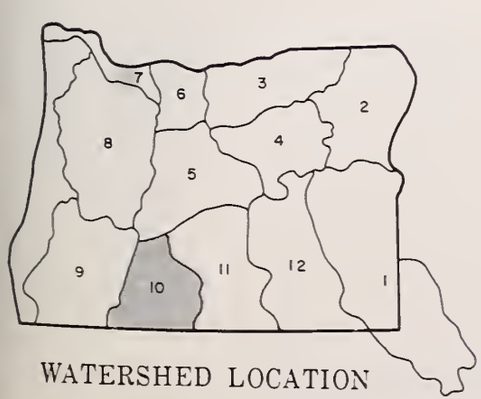
SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
					LAST YEAR	1943-57 AVERAGE
Annie Springs	6018	5/2	95	44.2	31.0	45.4
Beatty (PP&L)	4300	b				
Billie Creek Divide	5300	4/30	50	22.0	2.8	18.4[h]
Bly Mountain	5090	4/30	0	0.0	0.0	- -
Bly 101 Ranch (PP&L)	4800	b				
Chemult	4760	4/27	2	0.9	0.0	0.5[m]
Chiloquin (PP&L)	4187	b				
Cold Springs Camp	6100	c				
Crazyman Flat[e]	6100	c				
Crowder Flat[e] (Calif.)	5200	c				
Crystal (PP&L)	4200	c				
Diamond-Crater Summit	5800	4/29	69	31.8	19.6	- -
Diamond Lake Junction (97)	4600	4/29	0	0.0	0.0	- -
Dog Hollow[e]	4900	c				
Finley Corrals[e]	6000	c				
Fort Klamath (PP&L)	4150	c				
Gerber	4850	c				
Harriman (Tomahawk) (PP&L)	4200	b				
Hyatt Prairie Reservoir	4900	c				
Kirk (PP&L)	4533	b				
Lake of the Woods	4960	4/25	31	14.0	2.7	6.1[h]
Park Headquarters	6450	5/2	127	60.1	48.8	60.7[h]
Pelican Guard Station	4150	4/30	0	0.0	0.0	- -
Quartz Mountain	5320	4/30	0	0.0	1.2	0.0[m]
Quartz Mountain (PP&L)	5504	4/30	0	0.0	1.8	- -
Seven Lakes #1	6800	c				
Seven Lakes #2	6200	c				
State Line (Calif.)	5750	c				
Strawberry	5600	4/30	T	T	2.1	- -
Summer Rim	7200	c				
Sun Mountain	5350	c				
Sycan Flat[e]	5500	c				
Taylor Butte	5100	c				
Yamsey (PP&L)	4600	c				

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

KLAMATH WATERSHEDS





WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station

Klamath Watersheds

"The Conservation of Water begins with the Snow Survey"

Area 11

WATER SUPPLY OUTLOOK
LAKE COUNTY, GOOSE LAKE WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook for Lake County is "average". Snowmelt was delayed by cool, April temperatures, but reservoir storage is a little better than average.

SNOW COVER

Snow remains on the higher ridges and more protected north slopes although May 1 snow surveys were scheduled for only the lower courses, which are now bare.

SOIL MOISTURE

Watershed soils continued to gain moisture from the melting snowpack and are now 90 percent of capacity.

RESERVOIR STORAGE

Cottonwood and Drews Valley reservoirs now hold 4,000 and 58,500 acre feet, respectively, compared with 8,900 and 66,300 one year ago. The average for Drews is 57,100 acre feet and Cottonwood is 3,600 acre feet.

STREAMFLOW

Streamflow forecasts vary from 90 percent of average or 9,500 acre feet on Twenty-mile Creek to 107 percent or 13,000 acre feet for Drews Reservoir inflow for the May-June period.

The Chewaucan is expected to flow 62,000 acre feet or 95 percent of the May-September average.

Deep and Honey creeks are forecast to flow 40,000 or 93 percent and 9,000 or 92 percent respectively.

Lake County should have near average water supplies this season.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River	Average	Average
Crooked Creek	Average	Average
Deep Creek	Average	Average
Dry Creek	Average	Average
East Side Goose Lake	Average	Average
Guano Lake	Average	Average
Honey Creek	Average	Average
Lakeview Water Users Assn.	Average	Average
Rock Creek (Hart Mtn.)	Average	Average
Silver-Buck Creeks	Average	Average
Summer Lake	Average	Average
Thomas Creek	Average	Average
Twentymile Creek	Average	Average
Warner Lakes	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood	9.1*	4.0	8.9	3.6
Drew	63.0	58.5	66.3	57.1

*Usable capacity for Cottonwood Reservoir changed from 8.7 to 9.1 because of earth spillway plug.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
NO.	NAME				
3840	Chewaucan near Paisley	62	May-Sept.	65	95
3715	Deep above Adel	40	May-June	43	93
3385	Drew Reservoir net Inflow	13.0	May-June	12.1	107
3785	Honey near Plush	9.0	May-June	9.8	92
3660	Twentymile near Adel	9.5	May-June	10.5	90

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Camas Creek	5720	42	14.5	4-27-64	13.1	13.1	13.2
Quartz Mountain	5320	48	15.3	4-30-64	9.1	11.0	9.7

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
					LAST YEAR	1943-57 AVERAGE
Bald Mountain (Nev.)	6720	c				
Bear Flat Meadow[e]	5900	c				
Camas Creek	5720	c				
Cox Flat[e]	5750	c				
Crane Mountain[e]	6020	c				
Crowder Flat[e] (Calif.)	5200	c				
Dismal Swamp[e] (Calif.)	7000	c				
Finley Corrals[e]	6000	c				
Hart Mountain[e]	6350	c				
Little Bally Mountain[e] (Nev.)	6600	c				
Mill Creek	6200	c				
Patton Meadows[e]	6800	c				
Quartz Mountain (PP&L)	5504	4/30	0	0.0	1.8	- -
Quartz Mountain	5320	4/30	0	0.0	1.2	0.0[m]
Sherman Valley[e]	6600	c				
Silver Creek	4900	c				
State Line[e] (Calif.)	5750	c				
Strawberry	5600	4/30	T	T	2.1	- -
Summer Rim	7200	c				
Sycan Flat[e]	5500	c				

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

LAKE COUNTY, GOOSE LAKE WATERSHEDS

WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- ● Snow Course
- † Aeriol Snow Depth Goge
- O COPCO Snow Stotion
- ⚑ Soil Moisture Stotion

Lake County, Goose Lake Watersheds

"The Conservation of Water begins with the Snow Survey"

Area 12

WATER SUPPLY OUTLOOK
HARNEY BASIN WATERSHEDS
OREGON

as of
MAY 1, 1964

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1964 water supply outlook in Harney County has been dimmed slightly by less than average April streamflow but still remains near average. Higher elevation snow cover is above average and watershed soil moisture is good.

SNOW COVER

Water content of the snowpack remaining at three key courses in the north end of Harney Basin averages 140 percent for May 1 and about 96 percent of last May 1.

Cool, April temperatures retarded snowmelt and caused some snow accumulation at higher elevations.

SOIL MOISTURE

Soil moisture in the northern end of the county is now 86 percent of capacity. Measurements taken one month ago in the southern end of the county show only 64 percent of capacity but should have improved considerably during April.

STREAMFLOW

Streamflow forecasts have been reduced 5 to 7 percent since April 1.

The Silvies is expected to flow 95,000 or 89 percent of average for the April-September period and Silver Creek 22,000 acre feet or 85 percent for the April-July period.

The Blitzen River is expected to flow 65,000 acre feet or 97 percent and Trout Creek near Denio 9,000 or 98 percent for the April-September period.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed os "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley	Average	Fair
Cow Creek	Average	Fair
Donner und Blitzen River	Average	Average
Mill-Coffeepot Creeks	Average	Fair
Rattlesnake Creek	Average	Fair
Silver Creek	Average	Average
Silvies River	Average	Average
Soldier-Prather Creek	Average	Fair
Trout Creek	Average	Average
Whitehorse Creek	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.) May 1, 1964

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of May 1, 1964

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[i]
3960	Donner und Blitzen near Frenchglen	65	April-Sept.	67	97
		54	April-June	55	98
4030	Silver near Riley	22	April-July	26	85
3935	Silvies near Burns	95	April-Sept.	107	89
		93	April-June	103	90
4065	Trout near Denio	9.0	April-Sept.	9.2	98
		8.0	April-July	8.5	99

SOIL MOISTURE

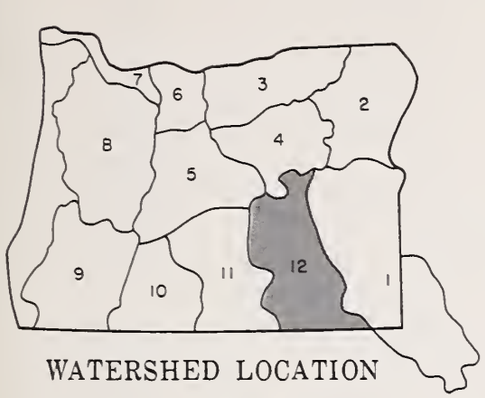
STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Springs	5900	42	16.9	4-28-64	12.5	14.0	14.4
Fish Creek	7600	48	15.0	3-30-64	9.2[f]	12.7[f]	8.8[f]
Folly Farm	4450	36	12.5	3-8-64	8.3[f]	9.8[f]	11.6
Silvies	6900	48	16.4	3-30-64	10.4[f]	9.5	12.7[f]
Snow Mountain	6300	48	16.7	3-31-64	12.4[f]	14.9[f]	15.1[f]
Starr Ridge	5150	36	10.6	4-28-64	10.6	10.6	10.3
Stinking Water	4800	48	21.9	3-25-64	20.8[f]	21.9[f]	21.9
Willow-Bald	5000	24	6.6	5-1-64	6.4	6.4[f]	6.1

SNOW

SNOW COURSE NAME	SNOW COURSE ELEVATION	CURRENT INFORMATION DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Blue Mountain Springs	5900	4/28	26	10.4	10.8	6.7[m]
Buck Pasture[e]	5700	4/15	6	3.0	- -	- -
Buckskin Lake[e]	5200	c				
Call Meadows[e]	5340	c				
Crow Camp[e]	5500	c				
Delintment Lake	5600	c				
Denio Creek[e]	6000	c				
Disaster Peak (Nev.)	6500	c				
Emigrant Butte	5000	c				
Fish Creek[e]	7900	4/15	60	29.0	- -	- -
Foster Flat[e]	5020	c				
Hart Mountain[e]	6350	c				
Idlewild Camp	5200	4/29	0	0.0	0.0	- -
Izee Summit	5293	4/28	5	2.5	1.7	1.6[m]
Lake Creek	5120	c				
Oregon Canyon[e]	6950	4/15	6	3.0	- -	- -
Rock Spring	5100	4/29	0	0.0	0.0	- -
Silvies[e]	6900	4/15	27	13.5	- -	- -
Snow Mountain	6300	c				
Starr Ridge	5150	4/28	0	0.0	1.0	0.9[m]
Stinking Water	4800	4/29	0	0.0	- -	- -
Trout Creek[e]	7800	4/15	24	8.4	- -	- -
"V" Lake[e]	6600	4/15	8	4.0	- -	- -

(a) Assuming normal meteorological conditions. (b) No report. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage, water content estimated. (f) Nearest current data. (g) Partly estimated. (h) 1943-57 adjusted average. (i) 1943-57, 15 year average. (j) Telephonic report - data not confirmed. (k) Data from PP&L Co. or USBR records. (m) Average for 5 or more years in base period.

HARNEY BASIN WATERSHEDS



WATERSHED LOCATION

10 0 10 20 30
SCALE IN MILES

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aeriol Snow Depth Gage
- Soil Moisture Station

Harney Basin Watersheds

"The Conservation of Water begins with the Snow Survey"

OWYHEE, MALHEUR WATERSHEDS (1)

Owyhee River

Number	Name		Sec.	Twp.	Rge.	Elev.
[illegible]	Antelope Ridge	(Ida)	32	8S	1W	5900
[illegible]	Battle Creek	(Ida)	10	11S	1E	5700
[illegible]	Bear Creek	(Nev)	31	46N	58E	7800
[illegible]	Big Bend	(Nev)	30	45N	56E	6700
[illegible]	Blue Mtn Pass		4	38S	42E	5290
[illegible]	Buckskin, Lower	(Nev)	25	45N	39E	6700
[illegible]	Buckskin, Upper	(Nev)	11	45N	39E	7200
[illegible]	Bull Basin	(Ida)	29	12S	5W	5600
[illegible]	Disaster Peak	(Nev)	8	47N	34E	6500
[illegible]	Fish Creek		4	33S	33E	7900
[illegible]	Folly Farm Summit		8	30S	38E	4450
[illegible]	Fox Creek	(Nev)	33	46N	58E	6800
[illegible]	Fry Canyon	(Nev)	31	43N	54E	6700
[illegible]	Gold Creek	(Nev)	31	45N	56E	6600
[illegible]	Granite Peak	(Nev)	22	44N	39E	7800
[illegible]	Hyde Pasture	(Ida)	31	8S	2W	5800
[illegible]	Jack Creek, Lower	(Nev)	18	42N	53E	6800
[illegible]	Jack Creek, Upper	(Nev)	9	42N	53E	7250
[illegible]	Jack Peak	(Nev)	28	42N	53E	8420
[illegible]	Jordan Valley		9	30S	46E	4390
[illegible]	Lookout Butte		2	40S	47E	5650
[illegible]	Louse Canyon		27	40S	44E	6440
[illegible]	Martin Creek	(Nev)	18	44N	40E	6700
[illegible]	Midas	(Nev)	18	39N	46E	7200
[illegible]	Mud Flat	(Ida)	34	9S	2W	5500
[illegible]	Oregon Canyon		8	40S	40E	6950
17H6a	Quinn Ridge	(Nev)	9	47N	41E	6300
16G11a	Red Canyon	(Ida)	32	11S	4W	6500
15H6M	Rodeo Flat	(Nev)	36	43N	53E	6800
15H3A	76 Creek	(Nev)	6	44N	58E	7100
16F3	Silver City	(Ida)	6	5S	3W	6400
18G1MA	Silvies		35	32S	32¾E	6900
16G1	South Mountain No.2	(Ida)	35	7S	5W	6340
16F6a	Succor Creek	(Ida)	25	3S	5W	6100
15H9M	Taylor Canyon	(Nev)	35	39N	53E	6200
15H8	Tremewan Ranch	(Nev)	9	39N	55E	5700
16G4MA	Triangle	(Ida)	25	7S	3W	5150
18G5a	Trout Creek		10	41S	38E	7800
18G7a	"V" Lake		31	35½S	32¾E	6600

Malheur River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E14	Barney Creek	16	14S	36E	5950
18E16M	Blue Mountain Spring	21	15S	35E	5900
18F6a	Buck Pasture	21	29S	35E	5700
18E21a	Bully Creek	10	17S	37E	5300
18F7a	Call Meadows	29	20S	33E	5340
17F2a	Cottonwood-Indian	10	19S	39E	4320
18E19M	Crane Prairie	24	16S	34E	5375
18F8a	Crow Camp	Unsurveyed			
18E20	Eldorado Pass	20	14S	38E	4600
18E26a	Flag Prairie	32	16S	36E	4750
18E18	Lake Creek	10	16S	33½E	5120
18E22a	Logan Valley	13	16S	33½E	5100
18F1	Rock Spring	23	18S	32E	5100
18F4M	Stinking Water	33	21S	34E	4800

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS (2)

Burnt River

Number	Name	Sec.	Twp.	Rge.	Elev.
13E14	Barney Creek	16	14S	36E	5950
18E13M	Blue Mountain Summit	6	12S	36E	5098
17E1M	Dooley Mountain	32	11S	40E	5430
18E20	Eldorado Pass	20	14S	38E	4600
13E8	Gold Center	21	9S	36E	5340
18E9	Tipton	34	10S	35½E	5100

Powder River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E1	Anthony Lake	18	7S	37E	7125
18E5	Bourne	33	8S	37E	5800
17E1M	Dooley Mountain	32	11S	40E	5430
18E3	Eilertson Meadows	18	8S	39E	5400
18E8	Gold Center	21	9S	36E	5340
18E6	Goodrich Lake	4	9S	38E	6775
17D12m	Ladd Summit	5	5S	39E	3730
18E23	Little Alps	10	7S	37E	6200
18D10	Summit Springs	9	6S	37E	6000
17D7	Taylor Green	3	6S	42E	5740

Pine Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
17D8	Schnaider Meadows	35	6S	45E	5400

Grande Ronde River

Number	Name	Sec.	Twp.	Rge.	Elev.
17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7300
18E1	Anthony Lake	18	7S	37E	7125
17D10a	Bald Mountain	14 & 15	4S	41E	6700
18D9	Beaver Reservoir	8	5S	37E	5340
18D8	County Line	28	4S	34E	4800
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
17D13a	Mirror Lake	34	4S	44E	8200
17D6M	Moss Spring	28	3S	41E	5850
1807	Schoolmarm	28	4S	34E	4775
17D11a	Standley	28	2S	42E	7400
17D7	Taylor Green	3	6S	42E	5740
18D3M	Tollgate	32	4N	38E	5070
17D15	TV Ridge	11	2S	43E	5670

Imnaha River

Number	Name	Sec.	Twp.	Rge.	Elev.
17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7000
17D14	Big Sheep	33	4S	46E	6200

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS (3)

Umatilla River

Number	Name	Sec.	Twp.	Rge.	Elev.
19D2	Arbuckle Mountain	33	4S	29E	5400
18D14m	Athena-Weston Summit	21	4N	35E	1700
18D12M	Battle Mountain Summit	29	3S	31E	4340
18D4M	Emigrant Springs	29	1N	35E	3925
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
18D3M	Tollgate	32	4N	38E	5070
18D13	Walla Walla Diversion	22	6N	38E	2400

Walla Walla River

Number	Name	Sec.	Twp.	Rge.	Elev.
18D16	Blue Mountain Camp	35	4N	37E	4300
18D3M	Tollgate	32	4N	38E	5070
18D17	Weston Mountain	25	4N	35E	2700

Willow Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
19D2	Arbuckle Mountain	33	4S	29E	5400

UPPER JOHN DAY WATERSHEDS (4)

Upper John Day River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E1	Anthony Lake	18	7S	37E	7125
19D2	Arbuckle Mountain	33	4S	29E	5400
18D12M	Battle Mountain Summit	29	3S	31E	4340
19E2M	Beach Creek Summit	4	12S	30E	4800
18E16M	Blue Mountain Spring	21	15S	35E	5900
18E13M	Blue Mountain Summit	6	12S	36E	5098
19E3M	Derr	14	13S	23E	5670
18E27a	East Fork Canyon	15	15S	32E	5700
18E8	Gold Center	21	9S	36E	5340
18E24a	Indian Cr. Butte	5	15S	33E	6550
19E9	Izee Summit	28	16S	29E	5293
18D6	Lucky Strike	28	3S	32E	5050
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
18E7	Oliva Lake	14	9S	33½E	6000
18D7	Schoolmarm	28	4S	34E	4775
19F1M	Snow Mountain	1	19S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18E9	Tipton	34	10S	35½E	5100
18E25M	Williams Ranch	20	15S	32E	4500

UPPER DESCHUTES, CROOKED WATERSHEDS (5)

Upper Deschutes River

Number	Name	Sec.	Twp.	Rge.	Elev.
21E11	Black Pine Spring	14	16S	9E	4600
21F8	Caldwell Ranch	30	21S	8E	4400
22F3	Cascade Summit	7	23S	6E	4880
21F7	Charlton Lake	23	21S	6E	5750
21F11	Chemult	21	27S	8E	4760
21F14	Fire Road	36	21S	11E	5050
21E6	Hogg Pass	24	13S	7½E	4755
21F4	Hungry Flat	30	18S	11E	4400
21F6	Irish-Taylor	25	20S	6E	5500
21F17	Mowich	29	25S	25E	4700
21F10	New Crescent Lake	11	24S	6E	4800
21F19	New Dutchman Flat #2	21	18S	9E	6400
21F13	Paulina Lake	34	21S	12E	6330
21F15	Paulina Prairie	28	21S	11E	4285
21F3	Tangent	28	18S	10E	5400
21E15	Three Creeks Butte	27	16S	9E	5200
21E13	Three Creek Meadows	3	17S	9E	5600
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600
22F15	Windigo Pass	20	25S	6E	5800

Crooked River

Number	Name	Sec.	Twp.	Rge.	Elev.
19E3M	Derr	14	13S	23E	5670
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
19F1M	Snow Mountain	1	19S	26E	6300
19E4	Tamarack	8	15S	25E	4800

HOOD, MILE CREEKS LOWER DESCHUTES WATERSHEDS (6)

Hood River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D5	Brooks Meadows	2	2S	10E	4300
21D25M	Cooper Spur	6	2S	10E	3490
21D1	Greenpoint Reservoir	28	2N	9E	3400
21D20	Knabal Springs	31	1S	11E	3850
21D23	Parkdale	6	1S	10E	1770
21D8	Phlox Point	6	3S	9E	5600
21D4	Red Hill	20	1S	9E	4400
21D9	Still Creek	25	3S	8½E	3700
2107	Tilly Jane	15	2S	9E	6000
21D21	Ulrich Ranch Junction	28	1S	11E	3350
21D24	Upper Valley	20	1S	10E	2530
21D28	Switchback	28	1S	9E	3255

Mile Creeks - Mosier Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
21D6	Brooks Meadows	2	2S	10E	4300
21D20	Knebal Springs	31	1S	11E	3850
21D21	Ulrich Ranch Junction	28	1S	11E	3350

Lower Deschutes River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D12	Clear Lake	29	4S	9E	3500
21E6	Hogg Pass	24	13S	7½E	4755

LOWER COLUMBIA WATERSHEDS (7)

Sandy River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700

WILLAMETTE WATERSHEDS (8)

Clackamas River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D15	Big Bottom	25	6S	7E	2118
21D13	Clackamas Lake	35	5S	8½E	3400
21D12	Clear Lake	29	4S	9E	3500
21D16	Lake Harriet	4	6S	7E	2045
21D14	Peavine Ridge	14 & 15	6S	7E	3500
21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700
21D17	Timothy Lake	26	5S	8E	3295

Santiam River

Number	Name	Sec.	Twp.	Rge.	Elev.
22E1	Detroit (town)	1	10S	5E	1610
22E2	Detroit Dam	7	10S	5E	1580
21E6	Hogg Pass	24	13S	7½E	4755
21E4	Marion Forks	23	11S	7E	2730
22E3	Mill City	29	9S	3E	826
21E5	Santiam Junction	14	13S	7E	3990
21E3	Whitewater Bridge	28	10S	7E	2175

McKenzie River

Number	Name	Sec.	Twp.	Rge.	Elev.
21E8	Dead Horse Grade	13	16S	7E	3800
22E4	Lost Creek Ranch	24	16S	6E	1956
21E7	McKenzie	35	15S	7½E	4800
22E5	McKenzie Bridge	13	16S	5E	1372
22E6	Vida	28	16S	2E	800
21E9	White Branch Slide	15	16S	7E	2800

Middle Fork Willamette River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F3	Cascade Summit	[illegible]	[illegible]	[illegible]	[illegible]
22F6	McCredie Springs	[illegible]	21S	[illegible]	[illegible]
22F8	Meridian Inn	[illegible]	[illegible]	[illegible]	[illegible]
22F7	Oakridge	[illegible]	[illegible]	3E	[illegible]
22F5	Railroad Overpass	[illegible]	22S	[illegible]	[illegible]
22F4	Salt Creek Falls	33	22S	[illegible]	[illegible]
22F2	Waldo Lake	15	21S	6E	[illegible]
22F14	Willamette Pass	33	24S	[illegible]	[illegible]

Coast Fork Willamette River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F9	Champion	[illegible]	[illegible]	1E	[illegible]
22F10	Golden Curry Creek	1	23S	1E	[illegible]
22F13	Layng Creek R. S.	31	21S	1E	[illegible]
22F12	Lund Park	[illegible]	22S	1E	[illegible]
22F11	Weaver Creek	[illegible]	[illegible]	1E	[illegible]

Mary's River

Number	Name	Sec.	Twp.	Rge.	Elev.
23E1	Mary's Peak	21	12S	7W	[illegible]

ROGUE, UMPQUA WATERSHEDS (9)

Rogue River

Number	Name	Sec.	Twp.	Rge.	Elev.
23G4	Althouse	17	41S	7W	4530
22G6	Annie Spring	19	31S	6E	6018
22G28	Beaver Dam Creek	1	34S	4E	[illegible]
22G21	Big Red Mountain	31	40S	1W	[illegible]
22G13	Billie Creek Divide	30	36S	5E	5300
22G27	Deadwood Junction	8	38S	4E	4600
22F19	Diamond-Crater Summit	34	28S	6E	5800
22G14	Fish Lake	[illegible]	37S	4E	4865
22G12	Fourmile Lake	9	36S	5E	6000
23G3	Grayback Peak	9	40S	5W	6000
22G17	Hobart Lake	17	40S	3E	5010
22G26	Howard Prairie	32	38S	4E	4500
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G22	Little Red Mountain	25	40S	2W	6500
23G5	Page Mountain	8	41S	7W	4045
22G5	Park Headquarters	8	31S	6E	6450
22G29	Rye Spring Spur	33	36S	4E	5000
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
22G2	Silver Burn	33	30S	4E	3720
22G20	Siskiyou Summit	17	40S	2E	4630
22G9	South Fork Canal	12	33S	3E	3500
22G18	Wagner Butte	1	40S	1W	6900
22G1	Whaleback	3	31S	2E	5140

Umpqua River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F9	Champion	12	23S	1E	4500
22F18	Diamond Lake	29	27S	6E	5315
23G7	Eden Valley Summit	10	32S	10W	[illegible]
22F16	North Umpqua	19	26S	6E	4215
22F23	Red Butte No. 1	36	27S	2W	4560
22F24	Red Butte No. 2	30	27S	1W	4000
22F25	Red Butte No. 3	30	27S	1W	3500
22F26	Red Butte No. 4	36	27S	1W	3000
22F27	Red Butte No. 5	20	27S	1W	2500
22F28	Red Butte No. 6	17	27S	1W	2000
22F17	Trap Creek	1	27S	4E	3800
22G1	Whaleback	3	31S	2E	5140
22F15	Windigo Pass	20	25S	6E	5800

KLAMATH WATERSHEDS (10)

Klamath River

Number	Name		Sec.	Twp.	Rge.	Elev.
22G6	Annie Spring		19	31S	6E	6018
22G13	Billie Creek Divide		30	36S	5E	5300
21G5	Bly Mountain		15 & 22	37S	11E	5090
21F11	Chemult		21	27S	8E	4760
22G24	Cold Springs Camp		12	35S	5E	6100
20G12a	Crazyman Flat		9	34S	15E	6100
20H2a	Crowder Flat	(Cal)	30	47N	11E	5200
22F19	Diamond-Crater Summit		34	28S	6E	5800
21F18	Diamond Lake Jct. (97)		1	29S	7E	4600
21G6a	Dog Hollow		1	40S	14E	4900
20G14a	Finley Corrals		11	36S	16E	6000
22G12	Fourmile Lake		9	36S	5E	6000
21G4	Gerber		12	39S	13E	4850
22G16	Hyatt Prairie Reservoir		15	39S	3E	4900
22G26	Howard Prairie		32	38S	4E	4500
22G15	Lake of the Woods		11	37S	5E	4960
22G5	Park Headquarters		8	31S	6E	6450
22G25	Pelican Guard Station		9	36S	6E	4150
20G6M	Quartz Mountain		2	38S	16E	5320
22G10	Seven Lakes No. 1		3	34S	5E	6800
22G11	Seven Lakes No. 2		26	33S	5E	6200
20H1a	State Line	(Cal)	21	48N	11E	5750
20G9A	Strawberry		4	40S	16E	5600
20G2A	Summer Rim		15	33S	16E	7200
21G2	Sun Mountain		22	32S	7½E	5350
20G13a	Sycan Flat		25	31S	14E	5500
21G3	Taylor Butte		16	33S	11E	5100

Pacific Power and Light Company's Snow Stations

Number	Name	Sec.	Twp.	Rge.	Elev.
	[illegible] (PP&L)	22	[illegible]	12E	4300
	[illegible] Ranch (PP&L)	22	[illegible]	14E	4900
	[illegible] (PP&L)	[illegible]	[illegible]	[illegible]	4187
	[illegible] (PP&L)	26	[illegible]	6E	4200
	[illegible] (PP&L)	22	[illegible]	7½E	4150
	Kirk (PP&L)	1	[illegible]	[illegible]	[illegible]
	Quartz Mountain (PP&L)	[illegible]	[illegible]	16E	5504
	Harriman Lodge (PP&L)	[illegible]	36S	6E	4200
	[illegible] (PP&L)	[illegible]	31S	11E	4600

LAKE COUNTY, GOOSE LAKE WATERSHEDS (11)

Goose Lake

Number	Name		Sec.	Twp.	Rge.	Elev.
[illegible]	Bear Flat Meadow		[illegible]	[illegible]	19E	5900
[illegible]	Camas Creek		5	39S	21E	5720
20G11a	Cox Flat		16	37S	18E	5750
[illegible]	Crane Mountain		13	40S	21E	6020
[illegible]	Crowder Flat	(Cal)	30	47N	11E	5200
[illegible]	Dismal Swamp	(Cal)	31	48N	16E	7000
[illegible]	Patton Meadow		28	39S	18E	6800
[illegible]	Quartz Mountain		2	38S	16E	5320
20H1a	State Line	(Cal)	21	48N	11E	5750
[illegible]	Strawberry		4	40S	16E	5600

Abert Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
[illegible]	Bear Flat Meadow	[illegible]	36S	19E	5900
20G11a	Cox Flat	16	37S	18E	5750
[illegible]	Finley Corrals	11	36S	16E	6000
20G4	Mill Creek	1	35S	17E	6200
20G6M	Quartz Mountain	2	38S	16E	5320
20G10a	Sherman Valley	15	37S	21E	6600

Summer Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G2A	Summer Rim	15	33S	16E	7200

Silver Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
21F12	Silver Creek	25 & 26	29S	13E	4900
20G13a	Sycan Flat	25	31S	14E	5500

Warner Lake

Number	Name		Sec.	Twp.	Rge.	Elev.
20G8M	Camas Creek		5	39S	21E	5720
20G16a	Crane Mountain		13	40S	21E	6020
20H3a	Dismal Swamp	(Cal)	31	48N	22E	7000
19G1a	Hart Mountain		1	36S	25E	6350
20G10a	Sherman Valley		15	37S	21E	6600

Guano Lake

Number	Name		Sec.	Twp.	Rge.	Elev.
19H1	Bald Mountain	(Nev)	17	45N	21E	6720
19G1a	Hart Mountain		1	36S	25E	6350
19H4a	Little Bally Mt.	(Nev)	8	45N	19E	6600

HARNEY BASIN WATERSHED (12)

Silvies River - Silver Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
18F7a	Call Meadows	29	20S	33E	5340
19F2	Delintment Lake	28	19S	26E	5600
19F3	Emigrant Butte	14	21S	27E	5000
18F3	Idlewild Camp	27	20S	31E	5200
19E9	Izee Summit	28	16S	29E	5293
18F1	Rock Spring	23	18S	32E	5100
19F1M	Snow Mountain	1	19S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18F4M	Stinking Water	33	21S	34E	4800
19F4m	Willow-Bald	19	22S	29E	5000

Donner Und Blitzen River

Number	Name	Sec.	Twp.	Rge.	Elev.
18F6a	Buck Pasture	21	29S	35E	5700
18G2MA	Fish Creek	4	33S	33E	7900
19G1a	Hart Mountain	1	36S	25E	6350
18G1MA	Silvies	35	32S	32¾E	6900
18G7a	"V" Lake	31	35½S	32¾E	6600

Trout and Whitehorse Creeks

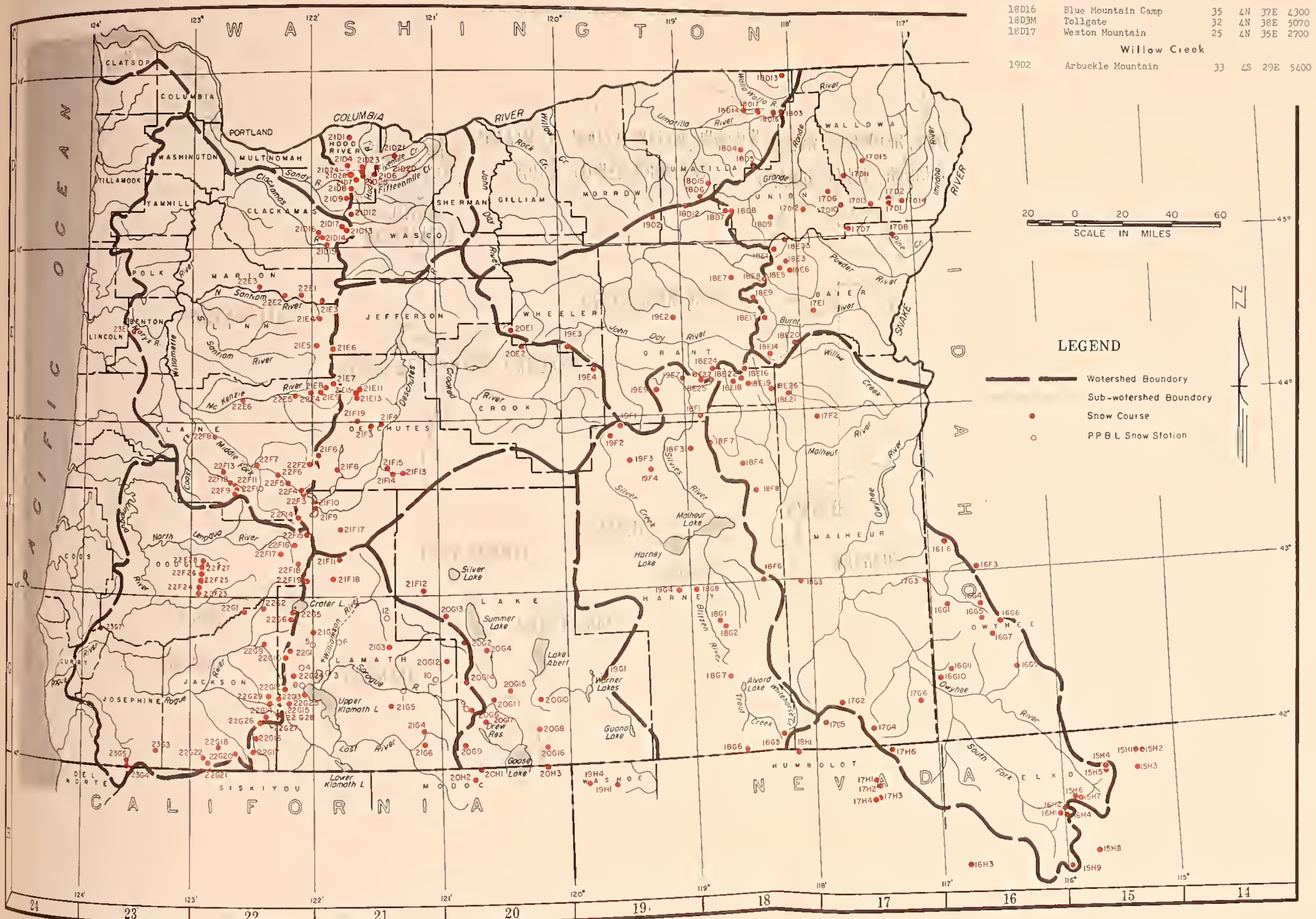
Number	Name		Sec.	Twp.	Rge.	Elev.
18G6a	Banjo Creek		14	41S	34E	6000
18H1	Disaster Peak	(Nev)	8	47N	34E	6500
17G5a	Oregon Canyon		9	40S	40E	6950
18G5a	Trout Creek		10	41S	38E	7800

Harney Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
18G8	Buckskin Lake	2	30S	30E	5200
19G4	Foster Flat	15	30S	29E	5020

LEGEND

19D2	SNOW COURSE ONLY
19D2M	SNOW COURSE AND SOIL MOISTURE
19D2MA	SNOW COURSE, SOIL MOISTURE AND AERIAL MARKER
19D2A	SNOW COURSE AND AERIAL MARKER
19D2m	SOIL MOISTURE ONLY
19D2a	AERIAL MARKER ONLY



Map and Index to OREGON SNOW COURSES

7-8-19101-0

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY
- Douglas County Water Resources Survey

FEDERAL
- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
- Department of National Defense
  - Corps of Army Engineers

PUBLIC UTILITIES
- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

MUNICIPALITIES
- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS
- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

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SOIL CONSERVATION SERVICE
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Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation , navigation , mining and industry

"The Conservation of Water begins with the Snow Survey"